

<b>CONTRACT AWARD</b>		<b>STATE OF ALASKA</b> HQ, STATE EQUIPMENT FLEET (Contracting Authority) 2200 E. 42nd Avenue Anchorage, Alaska 99508 (907-269-0800)		<b>CONTRACT AWARD NUMBER</b>	
		<b>CA1609255</b>			
ORDERING DEPARTMENT		COMMODITY CODE		DATE OF CONTRACT	
HEADQUARTERS, STATE EQUIPMENT FLEET 2200 E. 42ND AVENUE ANCHORAGE, ALASKA 99508		NUMBER & PERIOD OF RENEWAL OPTIONS NONE		PR NO./DATE ASSIGNED	
		DATE INITIAL CONTRACT BEGINS 1/21/09		DATE INITIAL CONTRACT ENDS 1/20/11	
CONTRACTOR		GS VENDOR CODE:			
ADDRESS		ISSUED IN ACCORDANCE WITH BID # SEF- 1417      DATED: 1/20/09			
YUKON EQUIPMENT 2020 E. 3RD AVENUE ANCHORAGE, AK 99501		PRICE ADJ. REQ. PRIOR TO EACH RENEWAL:			
CONTACT NAME		CPI/PPI BASE INDEX POINTS & MO/YR:			
ROGER MORRIS		REVIEW DATE:      RENEWALS EXPIRE (MO/YR):			
TELEPHONE NUMBER (907) 276-6795		ESTIMATED VALUE OF INITIAL TERM: \$2,000,000.00      REBID:			
SEND INVOICES IN DUPLICATE TO: DOT&PF, STATE EQUIPMENT FLEET, 2200 E. 42ND AVENUE, ANCHORAGE AK 99508					
NOTE: This order constitutes a binding commitment between the State and the contractor listed hereon. Unauthorized modification without the expressed prior approval of the contracting authority will result in a financial obligation on the contractor and/or unauthorized State personnel making the change.					
<b>DESCRIPTION</b>					
<p><b>THREE YEAR CONTRACT</b></p> <p><b>AIP TOWED AIRPORT RUNWAY CRADLING BROOMS</b></p> <p><b>FOR RURAL ALASKA AIRPORTS</b></p> <p><b>CONTRACTING OFFICER</b></p> <p><b>LYNDA SIMMONS</b></p> <p><b>PHONE: (907) 269-0788</b></p> <p><b>FAX: (907) 269-0801</b></p> <p><b><u>TABLE OF CONTENTS</u></b></p> <p><b>SECTION</b></p> <p><b>I. STANDARD TERMS &amp; CONDITIONS</b></p> <p><b>II. SPECIAL TERMS &amp; CONDITIONS</b></p> <p><b>III. PRICE SCHEDULE</b></p> <p><b>IV. SPECIFICATIONS</b></p>					
CONTRACTING AUTHORITY NAME & TITLE LYNDA SIMMONS, CONTRACTING OFFICER III				SIGNATURE	
TELEPHONE NO: 907-269-0793      FAX NO: 907-269-0801					
<b>IMPORTANT</b> 1. Contract award number and ordering department name must appear on all invoices and documents relating to this order. 2. The State is registered for tax free transactions under Chapter 32, IRS Code Registration No. 92-601185. Items are for the exclusive use of the State and not for resale.					

## SECTION I

### STANDARD TERMS AND CONDITIONS

- 1.0 ACCESSORIES:** When accessories are supplied, they must be certified to be compatible with the rest of the equipment. Certification will be written evidence satisfactory to the State that the accessories are compatible. The contractor's failure to supply this evidence within the time required by the State will cause the State to consider the contract non-responsive and reject the contract.
- 2.0 AMENDMENTS:** Contract terms shall not be waived, altered, modified, supplemented or amended without prior written approval of the Contracting officer.
- 3.0 ASSIGNMENT:** A contractor may not assign any portion of a contract unless authorized in advance and in writing by the contracting officer.
- 4.0 COMPLIANCE WITH ALL GOVERNMENT REGULATIONS:** The contractor must comply with all applicable federal, state, and borough regulations, codes, and laws, and pay all applicable federal, state, and borough taxes, and is liable for all required insurance, licenses, permits, and bonds. Failure to comply with such requirements shall constitute a breach of contract and shall be grounds for contract cancellation. Damages or costs resulting from noncompliance shall be the sole responsibility of the contractor.
- 5.0 CONFLICT OF INTEREST:** A person employed by the State of Alaska may not seek to acquire, be a party to, or possess a financial interest in, this contract if they are an employee of the administrative unit that supervises the award of this contract or they have the power to take or withhold official action to affect the contract.
- 6.0 CONTRACT PERIOD:** From the date of award for ONE YEAR (12 months). There are no options to renew.
- 7.0 DEFAULT:** In case of contractor default, the State may procure the goods or services from another source and hold the contractor responsible for any resulting excess costs and may seek other remedies under law or equity. Alaska Statutes and Regulations provide for suspension and disbarment of non-responsible contractors.
- 8.0 DELIVERY:** All deliveries shall be F.O.B. final destination point with all transportation and handling charges paid by the contractor. Responsibility and liability for loss or damage shall remain with the contractor until final inspection and acceptance when responsibility shall pass to the State except as to latent defects, fraud and contractor's warranty obligations.
- 9.0 DISCONTINUED ITEMS:** In the event an item is discontinued by the manufacturer during the life of the contract, another item may be substituted, provided that the contracting officer makes a written determination that it is equal or better than the discontinued item and provided that it is sold at the same price or less than the discontinued item.

- 10.0 DISPUTES:** Any disputes arising out of this solicitation shall be resolved under the laws of Alaska. An appeal or any original action to enforce any provision of this agreement must be in the superior court for the First Judicial District of Alaska.
- 11.0 FORCE MAJEURE (Impossibility to perform):** Neither party to this contract shall be held responsible for delay or default caused by acts of God and/or war, which is beyond that party's reasonable control. The State may terminate this contract upon written notice after determining such delay or default will reasonably prevent successful performance of the contract.
- 12.0 INDEMNIFICATION:** The Contractor shall indemnify, hold harmless, and defend the contracting agency from and against any claim of, or liability for error, omission or negligent act of the Contractor under this agreement. The Contractor shall not be required to indemnify the contracting agency for a claim of, or liability for, the independent negligence of the contracting agency. If there is a claim of, or liability for, the joint negligent error or omission of the Contractor and the independent negligence of the Contracting agency, the indemnification and hold harmless obligation shall be apportioned on a comparative fault basis. "Contractor" and "Contracting agency", as used within this and the following article, include the employees, agents and other contractors who are directly responsible, respectively, to each. The term "independent negligence" is negligence other than in the Contracting agency's selection, administration, monitoring, or controlling of the Contractor and in approving or accepting the Contractor's work.
- 13.0 INSPECTIONS:** Goods furnished under this contract are subject to inspection and test by the State at times and places determined by the State. If the State finds goods furnished to be incomplete or not in compliance with contract specifications, the State may reject the goods and require the contractor to either correct them without charge or deliver them at a reduced price, which is equitable under the circumstances. If the contractor is unable or refuses to correct such goods within a time deemed reasonable by the State, the State may cancel the order in whole or in part. Nothing in this paragraph shall adversely affect the State's rights as buyer, including all remedies and rights granted by Alaska statutes.
- 14.0 INSURANCE:**
- 14.1 Without limiting Contractor's indemnification, it is agreed that Contractor shall purchase at its own expense and maintain in force at all times during the performance of services under this agreement the following policies of insurance. Where specific limits are shown, it is understood that they shall be the minimum acceptable limits. If the Contractor's policy contains higher limits, the state shall be entitled to coverage to the extent of such higher limits. Certificates of Insurance must be furnished to the Contracting Officer prior to beginning work and must provide for a 30-day prior notice of cancellation, nonrenewal or material change of conditions. Failure to furnish satisfactory evidence of insurance or lapse of the policy is a material breach of this contract and shall be grounds for termination of the Contractor's services. All insurance policies shall comply with, and be issued by insurers licensed to transact the business of insurance under AS 21.

14.2 Proof of insurance is required for the following:

- 14.2.1 Workers' Compensation Insurance: The Contractor shall provide and maintain, for all employees engaged in work under this contract, coverage as required by AS 23.30.045, and; where applicable, any other statutory obligations including but not limited to Federal U.S.L. & H. and Jones Act requirements. The policy must waive subrogation against the State.
- 14.2.2 Commercial General Liability Insurance: covering all business premises and operations used by the Contractor in the performance of services under this agreement with minimum coverage limits of \$300,000 combined single limit per occurrence.
- 14.2.3 Commercial Automobile Liability Insurance: covering all vehicles used by the Contractor in the performance of services under this agreement with minimum coverage limits of \$300,000 combined single limit per occurrence.

14.3 Failure to supply satisfactory proof of insurance within the time required will cause the State to declare the contractor nonresponsive and to reject the contract.

**15.0 ITEM UPGRADES:** The State reserves the right to accept upgrades to models on the basic contract when the upgrades improve the way the equipment operates or improve the accuracy of the equipment. Such upgraded items must be at the same price as the items in the basic contract.

**16.0 NEW EQUIPMENT:** Equipment offered must be new equipment. New equipment means equipment that is currently in production by the manufacturer and is still the latest model, edition or version generally offered. The equipment must be warranted as new by the manufacturer and may not have been used for any purpose, other than display (not demonstration), prior to its sale to the State. The State will not accept remanufactured, used or reconditioned equipment. It is the contractor's responsibility to ensure that each piece of equipment delivered to the State complies with this requirement. A contract's failure to comply with this requirement will cause the State to seek remedies under breach of contract.

**17.0 PAYMENT:** Payment for agreements under \$500,000 for the undisputed purchase of goods or services provided to a State agency, will be made within 30 days of the receipt of a proper billing or the delivery of the goods or services to the location(s) specified in the agreement, whichever is later. A late payment is subject to 1.5% interest per month on the unpaid balance. Interest will not be paid if there is a dispute or if there is an agreement, which establishes a lower interest rate or precludes the charging of interest.

**18.0 SEVERABILITY:** If any provision of this contract is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected.

**19.0 SHIPPING DAMAGE:** The State will not accept or pay for damaged goods. The contractor must file all claims against the carrier(s) for damages incurred to items in transit from the point of origin to the ultimate destination. The State will provide the contractor with written notice when damaged goods are received.

- 20.0 STANDARD AND SPECIAL TERMS AND CONDITIONS:** The terms and conditions of this section are standard to State of Alaska, Department of Transportation and Public Facilities, Statewide Equipment Fleet contracts for the purchase of goods. There may also be other special terms and conditions in the contract which apply only to this contract. In the event of a conflict between the standard and special terms and conditions, the Special Terms and Conditions take precedence.
- 21.0 SUCCESSORS IN INTEREST:** This contract shall be binding upon successors and assigns.
- 22.0 SUITABLE MATERIALS:** All materials, supplies or equipment offered by a contractor shall be new, unused, of recent manufacture, and suitable for the manufacturer's intended purpose unless the specifications allow for used, rebuilt or remanufactured equipment.
- 23.0 TAXES:** Prices in the contract must be exclusive of federal, state, and local taxes. If the contractor believes that certain taxes are payable by the State, the contractor may list such taxes separately, directly below the price for the affected item. The State is exempt from Federal Excise Tax because articles purchased are for the exclusive use of the State of Alaska.
- 24.0 USE OF BRAND OR TRADE NAMES:** Brand or trade names used by the State in contract specifications are for the purpose of describing and establishing the standard of quality, performance and characteristics desired and are not a statement of preference nor are they intended to limit or restrict competition. Contractors may submit bids for substantially equivalent products to those designated unless the contract provides that a specific brand is necessary because of compatibility requirements. All such brand substitutions shall be subject to the State's approval.
- 25.0 WARRANTY:** Unless otherwise stated, all equipment shall be new and current model and shall carry full factory warranties. The contractor warrants all goods delivered to be free from defects in labor, material and manufacture and to be in compliance with contract specifications. All implied or expressed warranty provisions of the Uniform Commercial Code apply. All warranties shall be for and benefit the State.
- 26.0 HOLD OVER:** The State and the contractor agree that any holding over of the contract, excluding any exercised renewal options, shall remain in full force and effect. The State and the contractor also agree to provide written notice to the other party of the intent to cancel such month-to-month extension at least thirty (30) days before the desired date of cancellation.

## SECTION II

### SPECIAL TERMS AND CONDITIONS

NOTE: This section will be used for Terms and Conditions that are "special" and/or unique to a particular contract. The paragraphs in this section may change from contract to contract.

#### 1.0 DELIVERY:

- 1.1 **Pre-delivery service:** Prior to delivery, each vehicle, piece of equipment, or attachment shall be serviced and inspected by the dealer or his agent. A certification of this inspection must include the following (as applicable to the type of equipment):
  - 1.1.1 Dealer and vehicle identification
  - 1.1.2 Check-off of service and inspection performed including a list of all fluids including type weight and specification that are in the equipment as delivered for all fluid compartments.
  - 1.1.3 The vehicle's crankcase, differential and transmission, and other fluid compartments shall be filled to the manufacturer's recommended capacity.
  - 1.1.4 Fuel tank shall be filled to at least register a minimum ¼ full on the fuel gauge, unless restricted by the commercial carrier, when the vehicle arrives at the delivery location.
  - 1.1.5 The vehicle shall be clean and free from defects when delivered and should be ready for immediate and continued use upon delivery.
  - 1.1.6 Units delivered in an incomplete state, or that have deficiencies per the specification, are subject to the damage charges as noted in paragraph 4.0 below."
- 1.2 **Delivery Receipt:**
  - 1.2.1 A delivery receipt will be required for each unit delivered. This form will be supplied by the State Equipment Fleet prior to delivery. The receipt must be filled out by the vendor, and acknowledged by state receiving personnel by signature and date of actual receipt of equipment. One copy of this delivery receipt is to be given to the state-receiving agency. The original shall accompany the vendor's invoice to support and properly identify the vehicle delivered.
  - 1.2.2 Vendors are cautioned and advised that such delivery forms or other receiving type documents will not in any way be construed to mean the state has formally and fully accepted unit(s) referenced thereon as complete and meeting every specification set forth. Regional Equipment Managers are to be contacted regarding delivery coordination and contacts.

- 1.2.3 Under no conditions will warranty documents be presented at time of delivery for signature. Only the Contracting Officer or designee may sign warranty documentation.

## **2.0 LINE SHEETS/BILL OF MATERIALS:**

- 2.1 It is required within 30 days after delivery that the successful contractor provides a comprehensive listing of all components used to assemble the unit.
- 2.2 This includes any components installed by the manufacturer or any subcontractor or the contractor.
- 2.3 Information will include at a minimum, when available, make, model serial number on items such as engines, transmissions, axles, tires, bodies, plows, snow wings, belly blades, cranes, etc. The listings will be specific to each piece of equipment and will be provided on an individual CD for each unit delivered.
  - 2.3.1 On after-market items that are installed, part numbers with descriptions, such as, but not limited to hydraulic fittings, are to be provided.
- 2.4 A minimum of four (4) CD's per unit are to be provided and marked with the make, model, and last main numbers of the units serial number or State PO number.

## **3.0 F.O.B. POINT:**

- 3.1 The F.O.B. point for all items purchased under this contract is the final destination anywhere within the State of Alaska. Ownership of and title to the ordered items remains with the contractor until the items have been delivered at their final destination and are accepted by the State.
- 3.2 The cost of shipping and delivery beyond the limits of Seattle/Tacoma dock will be handled as follows. The contractor will prepay the shipping and delivery charges to any destination named by the State in its order. The contractor will charge-back those shipping and delivery charges to the State as a separate line item on the State's invoice
- 3.3 All shipping charges over \$100.00 must be documented by a copy of the actual shipping invoice and received with the invoice charge to the State.
  - 3.3.1 Per this contract, the unit, when shipped, is to be shipped on Totem Ocean Trailer Express, under deck, to protect it from ocean salt Spray.
- 3.4 Please refer to Section V – Price Schedule for F.O.B. point.

## **4.0 DAMAGES FOR LATE DELIVERY AND NON-CONFORMING GOODS:**

- 4.1 Time is of the essence in this contract. The contractor is expected to deliver goods that conform in all material respects to the contract specifications on or before the date provided therein, as may be amended by written agreement of the parties.
- 4.2 In the event that the goods are delivered late or in the event that the goods do not conform in all material respects to the contract specifications, the State shall be entitled to offset against the Contract Price, as **liquidated damages** and not as a

penalty, **an amount equal to \$200.00 multiplied by the number of days elapsing between the delivery date provided in the specifications and the date that conforming goods are delivered to the State.** The number of days for which liquidated damages shall apply shall include, in the case of non-conforming goods, the time reasonably necessary for the State to inspect the goods.

- 4.3 These liquidated damages represent a reasonable estimate of amounts necessary to compensate the State for loss of use of the goods during the period in which the goods would have been available to the State if conforming goods had been timely delivered.

## **5.0 WARRANTY:**

- 5.1 **Standard Warranty Package:** Unless otherwise stipulated by this contract, the contractor will provide a five-year (60-month) warranty.

5.1.1 Full (100%) Parts and Labor Warranty Coverage of all components for the 60-months, from the date the unit is placed in service. Warranty repairs shall take place at the vendor's warranty service centers in Anchorage, Fairbanks and Juneau. All travel costs for warranty performed outside of these areas will be billed as follows:

- 5.1.1.1 Travel Labor Charge, as quoted in Section V – Price Schedule. Travel labor will only be reimbursed for the time the employee is traveling from a warranty service center to the in-service location and return.
- 5.1.1.2 Mileage Charge, from the warranty service center to the in-service location, as quoted in Section V – Price Schedule.
- 5.1.1.3 Meals are paid at actual and charges must be accompanied by receipts and are not to exceed the State authorized \$42.00 per day.
- 5.1.1.4 Transportation, such as airfare, shall be reimbursed at actual and all charges are to be accompanied by a receipt/copy of the ticket.
- 5.1.1.5 Lodging shall be reimbursed at actual and shall not exceed \$100.00 per night unless no other lodging is available. Requests for reimbursement must be accompanied by a receipt.
- 5.1.1.6 Travel must be charged from the closest warranty service center to the in-service location unless otherwise approved by the Contract Administrator.

5.1.2 Full Warranty Coverage includes all cost of labor, parts, freight of parts or associated tools, transportation and travel in the Anchorage, Fairbanks and Juneau areas (within a 10 mile radius) lubricants, miscellaneous cost, etc., to place the unit in like-new condition.



- 5.1.3 Should the manufacturer's standard warranty exceed the minimum State warranty requirements, the manufacturer's warranty will run in conjunction with and enhance the State's warranty, then continue for the remainder of its term.

5.2 **Optional Warranty Package (OPTIONAL – DEDUCT Pricing. Refer to Section V – Price Schedule):** the contractor will provide a three-year (36-month) warranty, in lieu of five year.

- 5.2.1 Full (100%) Parts and Labor Warranty Coverage of all components for the 36-months, from the date the unit is placed in service. Warranty repairs shall take place at the vendor's warranty service centers in Anchorage, Fairbanks and Juneau. All travel costs for warranty performed outside of these areas will be billed as follows:

- 5.2.1.1 Travel Labor Charge, as quoted in Section V – Contractor Price Schedule. Travel labor will only be reimbursed for the time the employee is traveling from a warranty service center to the in-service location and return.

- 5.2.1.2 Mileage Charge, from the warranty service center to the in-service location, as quoted in Section V – Price Schedule.

- 5.2.1.3 Meals are paid at actual and charges must be accompanied by receipts and are not to exceed the State authorized \$42.00 per day.

- 5.2.1.4 Transportation, such as airfare, shall be reimbursed at actual and all charges are to be accompanied by a receipt/copy of the ticket.

- 5.2.1.5 Lodging shall be reimbursed at actual and shall not exceed \$100.00 per night unless no other lodging is available. Requests for reimbursement must be accompanied by a receipt.

- 5.2.1.6 Travel must be charged from the closest warranty service center to the in-service location unless otherwise approved by the Contract Administrator.

- 5.2.2 Full Warranty Coverage includes all cost of labor, parts, freight of parts or associated tools, transportation and travel in the Anchorage, Fairbanks and Juneau areas (within a 10 mile radius) lubricants, miscellaneous cost, etc., to place the unit in like-new condition.

- 5.2.3 Should the manufacturer's standard warranty exceed the minimum State warranty requirements, the manufacturer's warranty will run in conjunction with and enhance the State's warranty, then continue for the remainder of its term.

5.3 **General Warranty Requirements for all Equipment:**

5.3.1 **Warranty Exceptions:**

- 5.3.1.1 For clarification, warranty does not apply to normal wear and tear or maintenance items, accident damages, misuse of equipment or failure to operate or maintain equipment as prescribed by vendor/manufacturer.
- 5.3.2 **Warranty on Attachments:** Same as Standard Warranty Package.
- 5.3.3 **In-Service Date:**
  - 5.3.3.1 Warranty on vehicles not placed in service immediately upon receipt because of time lag to construct body components and/or installation of special equipment, or due to seasonal usage or other delay, shall be warranted from the date the vehicle is placed in service. The receiving agency shall notify the vendor/manufacturer in writing of the actual "in service" date. Notification of the requirement for delayed warranty will be provided on delivery orders whenever possible.
- 5.3.4 **Authorized Warranty Dealer (Contractor) and Subcontractor:** For the purpose of this contract, the contractor must meet the following applicable requirements:
  - 5.3.4.1 Contractor must:
    - 5.3.4.1.1 possess a current Alaska Motor Vehicle Dealer License pursuant to AS 08.66.010 through AS 08.66.090, when offering motor vehicles, trailers or semi-trailers, and;
    - 5.3.4.1.2 be a manufacturer(s) authorized warranty service dealer for each unit, and;
    - 5.3.4.1.3 have the capability of providing warranty servicing and repair work within the State of Alaska, with authorized warranty repair facilities in Anchorage at a minimum.
  - 5.3.4.2 Contractor, if appropriate, shall submit the name, address, Alaska business license of any subcontractor who will provide the warranty servicing and repair work referenced in paragraph 5.1 above. The contractor must also provide contractual documentation or agreements with the subcontractor insuring the state that the subcontractor will provide complete contract performance on behalf of the contractor as set forth in this contract and verification that the work provided will maintain manufacturer's warranty requirements.
    - 5.3.4.2.1 Approval of all subcontractors must take place prior to the bid opening.
    - 5.3.4.2.2 The use of a subcontractor does not exclude the provisions as noted in paragraphs 5.2.4.1, and

subsequent paragraphs, as requirements to the contractor.

**5.3.5 Warranty Claims:**

- 5.3.5.1 Warranty will be provided at the unit's assigned (in-service) location as shown on Purchase Order. Because of the remote location of some equipment it is not always practical to deliver equipment to authorized warranty repair facilities. In these cases, the vendor may perform warranty work at the state's location or, the State of Alaska, at its discretion, reserves the right to perform the warranty work and be reimbursed by the vendor.
- 5.3.5.2 The State of Alaska has established a warranty procedure whereby the vendor is to be notified via letter, telex, fax, telegram, etc. that warranty work needs to be performed. If time is of the essence, a telephone call confirmed by one of the above written procedures may be utilized. The vendor must notify the state immediately that it will begin to perform the warranty work at the equipment location within 48 hours from receipt of written notification. The State may, at its discretion, proceed to make warranty repairs with its own work force in the case of emergency situation or to preclude excessive downtime (greater than 48 hours).
- 5.3.5.3 Failure to notify the State, that the vendor intends to begin to perform warranty work promptly under this paragraph, by the end of the business day following the states notification that work is required to be performed, is considered a contractual breach.

- 5.3.6 The vendor will be invoiced for required warranty work performed by the state. The shop rate to be charged for warranty work performed by the state will be \$84.00 per hour. Labor hours to be charged will be in accordance with appropriate flat rate manuals. If flat rate manuals do not cover the labor operation, actual repair time will be used. Warranty work performed by state shop personnel at locations where no shop personnel are permanently stationed may be subject to travel expenses incurred involving those warranty repairs.

**5.3.7 Factory Recall:**

- 5.3.7.1 Nationwide factory recall or product update programs are the responsibility of the vendor and/or manufacturer. The State will attempt to bring affected equipment to an authorized repair facility. However, because of the remoteness of some equipment this is not always practicable or economical. In such cases, factory recall and modification work will be handled the same as warranty work. Factory recall notices sent to the state

should, in addition to serial number, include model, year, and dealer from who purchased.

## **6.0 REPAIR ORDERS AND DOCUMENTATION:**

- 6.1 Any work performed by the contractor or approved subcontractor, whether warranty or any other work on a piece of equipment purchased under this contract, will require a copy of the repair order, any invoices showing parts and commodities including oils and types used.

## **7.0 PUBLICATIONS:**

- 7.1 Publications for each unit ordered are to be received by the State of Alaska no later than 10 days after receipt of the unit. Custom manuals may be delivered no later than 90 days after receipt of the unit. Delivery will not be considered complete until the publications for each unit have been received by the State of Alaska. Note: Publications, when required, will be ordered on the same Purchase Order as the unit itself.

7.1.1 All manuals are to be pre-assembled in factory binders prior to delivery.

### **7.2 Service Manuals:**

7.2.1 Complete set(s) (compact disc or books) to include applicable information covering prime unit and attachments:

7.2.2 Body, chassis, and electrical

7.2.3 Engine, transmission, and differential(s) (service and rebuild)

7.2.4 Electrical and vacuum troubleshooting

7.2.5 Wiring diagrams

7.2.6 Service specifications

7.2.7 Engine/emission diagnosis

### **7.3 Parts Manuals:**

7.3.1 Complete set(s) (compact disc or paper books) to include prime unit and attachments, including updates. If updates are not provided during the five-year warranty period, the State will order them from the manufacturer and bill the contractor for the full cost, including shipping.

7.3.2 Parts manuals are to be customized by serial number.

7.4 **Operator's Manuals:** Complete set(s) to include prime unit and attachments.

7.5 **Quantities:** As noted on Purchase Order.

7.6 **Manuals:** To be delivered to, and receipt signed by:

7.6.1 Person(s) as noted on the Purchase Order.

7.7 **Service Bulletins, Etc.:** The contractor must provide appropriate service bulletins, technical support bulletins, service letters, product support bulletins,

and/or any other information type notifications that are sent out to the vendor or used by the manufacturer in the maintenance and report of the vehicle, equipment or attachments being provided. The intent of this clause is that the State of Alaska be provided notification of any and all changes or improvements that may affect the maintenance, reliability, longevity, and safety of our equipment. This information will be provided as soon as possible to the following location(s):

Southwest District: DOT&PF, Dee Linton – Southwest District  
Equipment Manager, 4801 Boniface Parkway, Anchorage,  
Alaska 99507 (907-269-5971)

**8.0 STATEMENT OF ORIGIN:** The contractor will be required to furnish a Manufacturer's Statement of Origin for Automotive or Non-Automotive rolling stock for each unit. All such documents shall be forwarded to:

DOT&PF, HQ State Equipment Fleet  
2200 E. 42<sup>nd</sup> Avenue, Room #311  
Anchorage, Alaska 99508

**9.0 WEIGHT VERIFICATION SLIPS:** A weight scale ticket of the completed unit is required to be included with the Statement of Origin.

**10.0 INSPECTIONS:**

10.1 The State's inspection of all materials and equipment upon delivery is for the sole purpose of identification. Such inspection shall not be construed as final or as acceptance of the materials or equipment if materials or equipment do not conform to contract requirements. If there are any apparent defects in the materials or equipment at the time of delivery, the State will promptly notify the contractor thereof. Without limiting any other rights of the State, The State at its option, may require the contractor to:

10.1.1 Repair or replace at contractor's expense, any or all of the damaged goods,

10.1.2 refund the price of any or all of the damaged goods, or

10.1.3 accept the return of any or all of the damaged goods.

10.2 Costs of remedying all defects, indirect and consequential costs of correcting same, and/or removing or replacing any or all of the defective materials or equipment will be charged against the contractor.

**11.0 PRICE:**

11.1 **Price Guarantee:** The contractor is responsible to maintain prices under the contract firm for 60 days after bid opening. All price increases or decreases must remain firm for the following 60 days.

11.2 **NO RETROACTIVE PRICE INCREASES WILL BE ACCEPTED.**

- 11.3 Price adjustments, increases or decreases, for subsequent orders, may be made by providing the contracting officer satisfactory evidence that all of the following conditions exist:
- 11.3.1 The increase is a result of the increased cost at the manufacturer's level and not costs under the contractor's control, and that;
    - 11.3.1.1 The increase will not produce a higher profit margin for the contractor than that on the original contract, and that;
    - 11.3.1.2 The increase affects only the item(s) that are clearly identified by the contractor.
    - 11.3.1.3 Satisfactory forms of the evidence of the above facts may include a certified invoice from the manufacturer, or an affidavit from an independent professional price-tracking firm that is recognized by the industry as reputable and knowledgeable. The contractor must be able to show the difference between the prior year's price and the current difference in the price being requested.
  - 11.4 **Price Decreases:** During the period of the contract, the contractor must pass on to the state all price decreases, such as fleet rebates. A contractor's failure to adhere strictly and faithfully to this clause will be considered a material breach of contract. The state reserves the right to cancel the contract if the contractor fails to properly perform the duties set out herein.

## **12.0 COOPERATIVE PURCHASING:**

- 12.1 All requests to cooperatively purchase, by qualified political subdivisions, from the resulting contract shall be approved by the contracting officer.
- 12.2 At no time may the contractor change the terms and conditions, alter the price to another entity, which differs from the contractual price, nor charge undisclosed administrative fees to allow cooperative purchasing.

**13.0 MANUFACTURER'S REBATE (INCENTIVES):** In any circumstance during or prior to completion of the contract, whereupon the State of Alaska becomes eligible to receive a rebate for any vehicle purchased under this contract, it shall be the CONTRACTOR'S responsibility to inform the contracting officer in writing and to advise the procedures for obtaining such rebates.

## **14.0 REPLACEMENT PARTS:**

- 14.1 The State of Alaska shall expect the dealer or manufacturer to provide replacement wear parts to the State of Alaska's Anchorage or Fairbanks facilities within two (2) working days of order or to Juneau's facility within seven (7) working days. All other parts must be available within ten (10) working days.
- 14.2 Back order procedures: Back orders are acceptable; however, the ordering shop shall be apprised at time of original orders as to the expected delay in delivery.

- 14.3 Warranty: All products supplied by the contractor shall be warranted against defects in materials and workmanship for a minimum of 90 days, commencing at the time of installation as long as the installation is within 12 months of purchase. The cost of any defective product and the labor required to replace the defective product shall be the obligation of the contractor.
- 14.3.1 If the manufacturer's warranty exceeds the stated warranty then manufacturer's warranty supersedes.
- 14.3.2 Parts Return: Within 12 months of purchase, the State is to be allowed to return new, parts with full refund, less shipping charges.
- 14.3.3 Invoicing: Full description of item is required on all invoices, packing lists and billings.

**15.0 BRAND NAME SPECIFICATION:** For purposes of this contract, certain vehicle accessories are specifically identified by brand name and model/part number. Only the listed brand name and model/part numbers are acceptable. Substitutes shall be not allowed.

**16.0 ADDITIONS OR DELETIONS:** The State reserves the right to add or delete items, agencies or locations as determined to be in the best interest of the State. Added items, agencies or locations will be related to those on contract and will not represent a significant increase or decrease in size or scope of the contract. Such additions or deletions will be documented via mutual agreement, will be at prices consistent with the original bid price margins, and will be evidenced by issuance of a written contract change notice from the Contracting officer.

**17.0 CONTRACT ADMINISTRATION:** The administration of this contract, including any/all changes, is the responsibility of the Contracting Officer, HQ State Equipment Fleet.

**18.0 PROPRIETARY INFORMATION AND STATEMENTS OF CONFIDENTIALITY:**

- 18.1 Except as set forth in this provision, all information in all bids will be made public under AS 36.30.530 not later than the time of issuance of a notice of intent to award.
- 18.2 If the contractor submits information considered by it to constitute a trade secret or proprietary data, such information may be expressly designated as such, and must be accompanied by the offeror's certification that (1) the information has consistently been maintained by its owner as a trade secret or as proprietary information, (2) the owner of the information has taken due care to protect it from release to non-privileged persons, and (3) to the best knowledge of the offeror, the information has not lost its status as trade secret or proprietary information, whether by lack of diligent protection, release to any non-privileged person or otherwise.
- 18.3 **Absence of such certification, any claim of confidentiality will be ignored, and the contractor may not hold any reasonable expectation of confidentiality.**

- 18.4 Any information so certified will be held confidential so long as the contracting officer concurs that it constitutes a trade secret or proprietary data, and deems it not critical to determination of the price, quantity, or delivery terms bid, or the responsiveness of the bid.
- 18.5 By submission of a bid, the offeror consents to the contracting officer's exercise of reasonable judgment as to concurrence with any assertion of confidentiality, and waives any and all claims for release of information that the contracting officer reasonably deems not confidential notwithstanding a certified assertion of confidentiality.
- 18.6 A certified assertion of confidentiality in which the Contracting Officer concurs, with respect to information the Contracting Officer deems critical to determination of the price, quantity, or delivery terms bid, or the responsiveness of the bid, will cause the contract to be rejected as non-responsive.

**19.0 TRADE RESTRICTION CLAUSE (9 CFR Part 30.13FAA Order 5100.38)**

- 19.1 The contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:
  - 19.1.1 is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
  - 19.1.2 has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;
  - 19.1.3 has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.
- 19.2 Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government.
- 19.3 Further, the contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.
- 19.4 The contractor shall provide immediate written notice to the sponsor if the contractor learns that its certification or that of a subcontractor was erroneous



when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.

- 19.5 This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.
- 19.6 Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- 19.7 This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

## **20.0 CIVIL RIGHTS ACT OF 1964, TITLE VI – CONTRACTOR CONTRACTUAL REQUIREMENTS (49 CFR Part 21 AC 150/5100-15)**

- 20.1 During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:
  - 20.1.1 **Compliance with Regulations.** The contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
  - 20.1.2 **Nondiscrimination.** The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
  - 20.1.3 **Solicitations for Subcontracts, Including Procurements of Materials and Equipment.** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations

relative to nondiscrimination on the grounds of race, color, or national origin.

- 20.1.4 **Information and Reports.** The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information; and its facilities as may be determined by the Sponsor or the Federal Aviation Administration (FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor shall so certify to the sponsor or the FAA, as appropriate, and shall set forth what efforts it has made to obtain the information.
- 20.1.5 **Sanctions for Noncompliance.** In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the sponsor shall impose such contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to:
- 20.1.5.1 Withholding of payments to the contractor under the contract until the contractor complies, and/or
- 20.1.5.2 Cancellation, termination, or suspension of the contract, in whole or in part.
- 20.1.6 **Incorporation of Provisions.** The contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the sponsor or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Sponsor to enter into such litigation to protect the interests of the sponsor and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

## **21.0 AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, SECTION 520 - GENERAL CIVIL RIGHTS PROVISIONS (Airport and Airway Improvement Act of 1982, Section 520, Title 49 47123, AC 150/5100-15, Para. 10.c)**

- 21.1 The contractor assures that it will comply with pertinent statutes, Executive orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance. This provision obligates the tenant/concessionaire/lessee or its transferee for the period during which Federal assistance is extended to the airport a program, except where Federal assistance is to provide, or is in the form of personal property or real property or interest therein or structures or improvements thereon.

In these cases the provision obligates the party or any transferee for the longer of the following periods: (a) the period during which the property is used by the airport sponsor or any transferee for a purpose for which Federal assistance is extended, or for another purpose involving the provision of similar services or benefits or (b) the period during which the airport sponsor or any transferee retains ownership or possession of the property. In the case of contractors, this provision binds the contractors from the bid solicitation period through the completion of the contract. This provision is in addition to that required of Title VI of the Civil Rights Act of 1964.

## **22.0 DISADVANTAGED BUSINESS ENTERPRISES (49 CFR Part 26)**

- 22.1 **Contract Assurance (§26.13)** - The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as the recipient deems appropriate.
- 22.2 **Prompt Payment (§26.29)** - The prime contractor agrees to pay each subcontractor under this prime contract for satisfactory performance of its contract no later than **30** days from the receipt of each payment the prime contractor receives from the State of Alaska. The prime contractor agrees further to return retainage payments to each subcontractor within [specify the same number as above] days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Contracting Officer This clause applies to both DBE and non-DBE subcontractors.

## **23.0 LOBBYING AND INFLUENCING FEDERAL EMPLOYEES (49 CFR Part 20, Appendix A)**

- 23.1 No Federal appropriated funds shall be paid, by or on behalf of the contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant and the amendment or modification of any Federal grant.
- 23.2 If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any Federal grant, the contractor shall complete and submit Standard Form-LLL, "Disclosure of Lobby Activities," in accordance with its instructions.

## **24.0 ACCESS TO RECORDS AND REPORTS (49 CFR Part 18.36(i),FAA Order 5100.38)**

- 24.1 The Contractor shall maintain an acceptable cost accounting system. The Contractor agrees to provide the Sponsor, the Federal Aviation Administration and the Comptroller General of the United States or any of their duly authorized

representatives access to any books, documents, papers, and records of the contractor which are directly pertinent to the specific contract for the purpose of making audit, examination, excerpts and transcriptions. The Contractor agrees to maintain all books, records and reports required under this contract for a period of not less than three years after final payment is made and all pending matters are closed.

#### **25.0 ENERGY CONSERVATION REQUIREMENTS (49 CFR Part 18.36 & Public Law 94-163)**

- 25.1 The contractor agrees to comply with mandatory standards and policies relating to energy efficiency that are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

#### **26.0 BREACH OF CONTRACT TERMS (49 CFR Part 18.36)**

- 26.1 Any violation or breach of terms of this contract on the part of the contractor or their subcontractors may result in the suspension or termination of this contract or such other action that may be necessary to enforce the rights of the parties of this agreement. The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

#### **27.0 RIGHTS TO INVENTIONS (49 CFR Part 18.36(i)(8) & FAA Order 5100.38)**

- 27.1 All rights to inventions and materials generated under this contract are subject to regulations issued by the FAA and the Sponsor of the Federal grant under which this contract is executed.

## **28.0 TRADE RESTRICTION CLAUSE (49 CFR Part 30.13 & FAA Order 5100.38)**

- 28.1 The contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:
  - 28.1.1 is not owned or controlled by one or more citizens of a foreign country included in the list of countries that discriminate against U.S. firms published by the Office of the United States Trade Representative (USTR);
  - 28.1.2 has not knowingly entered into any contract or subcontract for this project with a person that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list;
  - 28.1.3 has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.
- 28.2 Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract at no cost to the Government.
- 28.3 Further, the contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The contractor may rely on the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous.
- 28.4 The contractor shall provide immediate written notice to the sponsor if the contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide written notice to the contractor if at any time it learns that its certification was erroneous by reason of changed circumstances.
- 28.5 This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct through the Sponsor cancellation of the contract or subcontract for default at no cost to the Government.
- 28.6 Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

- 28.7 This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

## **29.0 TERMINATION OF CONTRACT (49 CFR Part 18.36(i)(2) & FAA Order 5100.38)**

- 29.1 The Sponsor may, by written notice, terminate this contract in whole or in part at any time, either for the Sponsor's convenience or because of failure to fulfill the contract obligations. Upon receipt of such notice services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract, whether completed or in progress, delivered to the Sponsor.
- 29.2 If the termination is for the convenience of the Sponsor, an equitable adjustment in the contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed services.
- 29.3 If the termination is due to failure to fulfill the contractor's obligations, the Sponsor may take over the work and prosecute the same to completion by contract or otherwise. In such case, the contractor shall be liable to the Sponsor for any additional cost occasioned to the Sponsor thereby.
- 29.4 If, after notice of termination for failure to fulfill contract obligations, it is determined that the contractor had not so failed, the termination shall be deemed to have been effected for the convenience of the Sponsor. In such event, adjustment in the contract price shall be made as provided in paragraph 2 of this clause.
- 29.5 The rights and remedies of the sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

## **30.0 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION (49 CFR Part 29 & FAA Order 5100.38)**

- 30.1 The contractor certifies, by the acceptance of this contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees by submitting this proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the contractor or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/proposal.

## **31.0 CLEAN AIR AND WATER POLLUTION CONTROL (49 CFR Part 18.36(i)(12) & Section 306 of the Clean Air Act & Section 508 of the Clean Water Act)**

- 31.1 Contractors and subcontractors agree:
- 31.1.1 That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;

- 31.1.2 To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued there under;
- 31.1.3 That, as a condition for the award of this contract, the contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;
- 31.1.4 To include or cause to be included in any construction contract or subcontract which exceeds \$100,000 the aforementioned criteria and requirements.

## **32.0 BUY AMERICAN CERTIFICATE:**

- 32.1 By submitting a bid for this contract, except for those items listed by the offeror below or on a separate and clearly identified attachment to this contract, the offeror certifies that steel and each manufactured product, are produced in the United States, as defined in the clause Buy American - Steel and Manufactured Products for Construction Contracts) and that components of unknown origin are considered to have been produced or manufactured outside the United States.
- 32.2 Offerors may obtain from the owner a listing of articles, materials and supplies excepted from this provision.
- 32.3 **IF THERE ARE NO EXCEPTIONS, WRITE "NONE".**

<i><b>Product</b></i>	<i><b>Country of Origin</b></i>
Broom head caster tires	Czech Republic
Broom head drive motor	China
Broom head gear box	Italy
Miscellaneous hose fittings	Various Countries
Turntable bearing	Mexico
Broom chassis tires	Japan
Air blower bent axis piston motor	
These components are not available from US manufacturers. Less than 5%.	

**33.0 BUY AMERICAN PREFERENCES (Section 9129 of the Aviation Safety and Capacity Expansion Act of 1990 & Title 49 U.S.C. Chapter 501)**

33.1 The Aviation Safety and Capacity Expansion Act of 1990 provides that preference be given to steel and manufactured products produced in the United States when funds are expended pursuant to a grant issued under the Airport Improvement Program. The following terms apply:

33.1.1 Steel and manufactured products. As used in this clause, steel and manufactured products include (1) steel produced in the United States or (2) a manufactured product produced in the United States, if the cost of its components mined, produced or manufactured in the United States exceeds 60 percent of the cost of all its components and final assembly has taken place in the United States. Components of foreign origin of the same class or kind as the products referred to in subparagraphs b. (1) or (2) shall be treated as domestic.

33.1.2 Components. As used in this clause, 'components' means those articles, materials, and supplies incorporated directly into steel and manufactured products.

33.1.3 Cost of Components. This means the costs for production of the components, exclusive of final assembly labor costs.

33.2 The contractor is required to assure that only domestic steel and manufactured products will be used by the contractor, subcontractors, material men and suppliers in the performance of this contract, except those:

33.2.1 that the US Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality;

33.2.2 that the US Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, that domestic preference would be inconsistent with the public interest; or

33.2.3 that inclusion of domestic material will increase the cost of the overall project contract by more than 25 percent.

33.3 Location of final assembly:

Company Name: M-B Companies

Physical Address: 1200 Park Street

City, State & Zip Code: Chilton, WI 53014



33.4 Statement of final assembly:

33.4.1 Unit will be 100% assembled in Chilton, WI.

**33.5 Percentage of U.S. Components:**

Provide a list of components meeting the requirement of "steel and manufactured products" listed above along with their dollar value, and summarize according to the following example to affirm that a minimum of 60 percent of all components are manufactured or produced in the United States.

33.6 This item intentionally left blank.

Example	
U.S. Manufactured Component	Cost
Engine	\$20,000.00
Transmission	10,000.00
Tires	<u>4,000.00</u>
Total Cost of U.S. Manufactured Components.....	\$34,000.00
Cost of item bid = \$50,000.00	

Contractor's Affirmation of U.S. Componentry:  
(Attach additional sheets if necessary)

U.S. Manufactured Component

1. Reference Buy America, Section 32.0

2. 100% US produced steel

**Percentage of U.S. Components.....** 95 %

### **SECTION III - PRICE SCHEDULE**

<u><b>Lot #1</b></u>			
<u>Item</u>	<u>Unit</u>	<u>Description</u>	<u>\$ Amount</u>
1a	1 ea.	18 Foot Towed Airport Runway Cradling Broom ..... Five (5) year warranty as per Section II – Special Terms and Conditions. Per specification #547-AIP contained herein. State Class # 547	<u><b>\$354,820.00</b></u>
		<b>Towed Cradling Runway Broom</b> <b>Year, Make &amp; Model Offered:</b>	
		<u><b>2009 M-B 4618-TTB-CRDL HIGH PERFORMANCE TRACKING TOW RUNWAY BROOM</b></u>	
1b	1 ea.	Optional Item (Pricing is required) ..... <b>DEDUCT</b> <u>Three year Warranty, in lieu of five year</u> (As per Special Terms and Conditions, Section III, 5.2)	<u><b>&lt;\$5,385.00</b></u>
1c	1 ea.	Optional Item (Pricing is required) ..... <u>Spare Tire and Wheel</u> (As per Spec Item 2.4.3)	<u><b>\$2,552.00</b></u>
1d	1 ea.	Optional Item (Pricing is required) ..... <u>Ground Speed Control</u> (As per Spec Item 2.8)	<u><b>\$1,182.00</b></u>
1e	1 ea.	Optional Item (Pricing is required) ..... <u>Spare Control Box</u> (As per Spec Item 4.3.5)	<u><b>\$5,627.00</b></u>
1f	1 ea.	Optional Item (Pricing is required) ..... <u>Rearview Camera</u> (As per Spec Item 5.12)	<u><b>\$2,016.00</b></u>
1g	1 ea.	Optional Item (Pricing is required) ..... <u>Base Unit Poly Wafers</u> (As per Spec Item 6.2.3.2)	<u><b>&lt;\$3,846.00&gt;</b></u>
1h	1 ea.	Optional Item (Pricing is required) ..... <u>Base Unit Wire Wafers</u> (As per Spec Item 6.2.3.3)	<u><b>&lt;\$1,451.00&gt;</b></u>
1i	1 ea.	Optional Item (Pricing is required) ..... <u>20 Foot Broom Length</u> (As per Spec Item 6.3)	<u><b>\$14,985.00</b></u>
1j	1 ea.	Optional Item (Pricing is required) ..... <u>Base Unit Poly Wafers</u> (As per Spec Item 6.3.3.2)	<u><b>\$2,660.00</b></u>
1k	1 ea.	Optional Item (Pricing is required) ..... <u>Spare Wire Wafers</u> (As per Spec Item 6.3.3.3)	<u><b>\$5,945.00</b></u>
1l	1 ea.	Optional Item (Pricing is required) ..... <u>20 Foot Broom With S.I.B Core</u> (As per Spec Item 6.4)	<u><b>\$35,985.00</b></u>

1m	1 ea.	Optional Item (Pricing is required) ..... <u>Powered Snow Shed</u> (As per Spec Item 6.7)	<b><u>\$5,362.00</u></b>
1n	1 ea.	Optional Item (Pricing is required) ..... <u>Caster Wheel Assemblies</u> (As per Spec Item 6.8.6)	<b><u>\$1,156.00</u></b>
1o	1 ea.	Optional Item (Pricing is required) ..... <u>Training in Anchorage</u> (As per Spec Item 9.0)	<b><u>\$4,618.00</u></b>
1p	1 ea.	Optional Item (Pricing is required) ..... <u>Training in Fairbanks</u> (As per Spec Item 9.0)	<b><u>\$5,026.00</u></b>
1q	1 ea.	Optional Item (Pricing is required) ..... <u>Training in Juneau</u> (As per Spec Item 9.0)	<b><u>\$5,026.00</u></b>
1r	1 ea.	Optional Item (Pricing is required) ..... <u>Publications</u> (As per Spec Item 10.7)	<b><u>\$476.00</u></b>
1s	1 ea.	Optional Item (Pricing is required) ..... <u>Pilot Inspection</u> (As per Spec Item 11.0)	<b><u>\$4,844.00</u></b>

TOTAL Lot 1 (includes 1a through 1s): **\$441,598.00**

**FOB Point:** FOB point is dockside Seattle/Tacoma area. However, the contractor is still responsible to ship the unit to its final assigned location. Refer to Section II – Special Terms and Conditions, paragraph 3.0 for more information on FOB point requirements.

**Required/Offered Delivery Time:** Not later than **240 Days** ARO.

## SECTION IV - SPECIFICATIONS

### SPECIFICATION #547-AIP Towed Airport Runway Cradling Broom January 2, 2009

#### GENERAL SPECIFICATION:

It is the purpose of this specification to describe a new, and of the manufacturer's latest current heavy-duty model and design, diesel powered towed airport runway cradling broom, equipped with a minimum 18 foot (and a optional minimum 20 foot in length) x minimum 46 inch diameter broom, a minimum 20,125 CFM air blower, and rear-wheel steering.

The maximum transport width is 8'6" (102 inches).

The proposed broom and air blower drive power system components including engine, gearbox, and hydrostatic pumps and motors must have in field proven experience. Prototypes will not be allowed. Manufacturer must have been in the continuous business of design and manufacturing of airport runway brooms for a period of not less than the past three (3) years.

The broom is to be capable of completely removing up to 2½ (2.5) inches light snow (8 to 15 pounds per cubic foot) at speeds of 10 to 30 MPH with a three (3) to four (4) inch strike pattern. The unit is to be capable of sweeping slush (density of 40 pounds per cubic foot) at speeds of 10 to 30 MPH. The unit shall also be capable of sweeping thin deposits of dry sand, dust, water, or other light debris.

Unit will be towed by a tractor truck utilizing a rigid 5<sup>th</sup> wheel plate.

Unit to include all standard equipment and accessories as advertised in manufacturer's specification sheet of model offered, unless otherwise specified herein.

#### APPLICATION:

To be used for winter and summer airport runway sweeping operations with the ability to remove snow, ice, slush, sand and other debris at rated speeds up to 35 MPH depending on conditions. Unit will be subject to varying terrain, tight turning radiuses and weather conditions with temperature ranges of plus 80 to minus 50 degrees Fahrenheit.

#### DOCUMENTATION REQUIRED:

A basic manufacturer's product brochure describing the unit

Specifications marked with an asterisk (\*) require supporting documentation in the form of a product brochure, manufacturer's technical data sheet, or a letter of clarification which indicates specifically what the contractor intends to supply in regard to said items. **In order to help prevent technical errors, following each asterisked item is space that may be used to address all of the asterisked items. It is highly recommended that this space or a letter of clarification be used to supply the required information.**

#### 1.0 POWER TRAIN:

- 1.1 (\*) Engine used to power the broom head and air blower system shall be a turbocharged, electronic fuel injection, four (4) cycle, water cooled, six (6) cylinder. M-B broom and air blower system is powered by a Caterpillar C13, 12.5 liters, 475 HP, governed at 2100 RPM producing 1188 ft-lbs of torque. It is a turbo charged, electronically fuel injected, four cycle, water cooled size cylinder diesel engine and is EPA Tier III compliant.
- 1.1.1 (\*) Displacement: 12.5 liter minimum. 12.5 liter
- 1.1.2 (\*) Gross HP: 470 minimum. 475 HP
- 1.1.3 (\*) Torque: 1150 pound foot of torque minimum. 1188 ft-lbs of torque
- 1.1.4 (\*) Governed RPM: 2100 maximum. 2100 RPM
- 1.1.5 (\*) EPA Tier III compliant. EPA Tier III compliant.
- 1.1.6 To be equipped with electronic controls for fuel injection and engine management including an automatic engine shutdown system with manual override and an electrical connector for *CATERPILLAR* or equivalent diagnostic system.
- 1.1.6.1 In addition to above shutdown language, engine is also to shutdown due to:
- 1.1.6.1.1 Low engine oil pressure.
- 1.1.6.1.2 High engine coolant temperature.
- 1.1.6.1.3 Loss of engine coolant.
- 1.1.6.1.4 Hydraulic oil loss (air blower and broom systems).
- 1.1.6.1.5 Also refer to engine compartment  
"INSTRUMENTATION/GAUGES" later in this specification.
- 1.2 Air Intake System:
- 1.2.1 (\*) Two (2) stage (dual dry element) air cleaner, heavy-duty, minimum. Brand: Enginair EN16, two stage, dual dry element, HD.
- 1.2.2 Air filter restriction indicator located close to oil dipstick or at the filter with a warning indicator in the cab.
- 1.2.3 Pre-Cleaner: To be *CENTRI* or *ENGINAIR* or *SURECO* Turbo-II.
- 1.3 Exhaust System:
- 1.3.1 Designed to prevent rain, snow, or slush from entering system.
- 1.3.2 To include heavy-duty muffler and rain cap or elbow (horizontal system is acceptable).
- 1.3.3 Located or caged to protect operator from burns.
- 1.4 Cooling System:

- 1.4.1 Coolant shall be *CHEVRON* Delo or *SHELL* Rotela (Red extended life coolant), affording protection to minus 50 degrees Fahrenheit.
  - 1.4.2 A coolant circulation bypass will be provided to allow coolant to circulate within the engine block while thermostat is closed.
  - 1.4.3 Drain cock(s) will be provided at engine block and/or radiator low point.
  - 1.4.4 Radiator to be mounted securely on vibration dampening mounts or be independent of engine mounting to eliminate vibration.
  - 1.4.5 Radiator to be located to minimize ingestion of wheel splash and blowing snow.
  - 1.4.6 To include a coolant sight glass easily viewed by ground personnel or a low coolant indicator.
  - 1.4.7 Clamps utilized on all coolant hoses one (1) inch inside diameter or larger are to be "Constant Torque" design, stainless steel. Some engine manufacturers may not allow changing of all clamps due to warranty.
  - 1.4.8 To include engine manufacturer's certification (at not later than time of pilot inspection) that the engine will maintain, but not exceed, a continuous operating temperature, as an operational unit, with a wide range of ambient temperatures to as low as minus 50 degrees Fahrenheit.
- 1.5 Fuel System:
- 1.5.1 Fuel filter system to include a *RACOR* hot engine coolant heated fuel and water separator or the *CATERPILLAR* electric heated filter separator.
    - 1.5.1.1 To include ball valve(s), if necessary to prevent excessive fuel loss when changing filter(s).
  - 1.5.2 Fuel filter(s) to be located in engine compartment with braided fuel lines to pump and easily accessible.
  - 1.5.3 Fuel Tank(s):
    - 1.5.3.1 (\*) To include a total capacity sufficient to supply fuel to the engine while operating at rated intermittent governed speed, for not less than ten (10) hours, shall be provided.  
Broom is supplied with a fuel supply of 150 gallons which provides a minimum of ten hours of operation.
    - 1.5.3.2 When more than one (1) tank is furnished, means shall be provided to assure equalized fuel level in all tanks. Inadequate sized equalization lines shall not hamper fueling time.
    - 1.5.3.3 Fuel line(s) shall be securely fastened in place, installed to prevent strains, and protected by grommets where lines project through aperture(s) in metal.

- 1.6 Fire Suppression System:
  - 1.6.1 To include an automatic Purple “K” 25.5 pound ABC/BC fire suppression system in the engine compartment area.
  - 1.6.2 This system shall be connected to the engine shutdown system (in case of fire the engine will be shutdown).
- 1.7 Engine oil filter, spin-on type, easily accessible.
- 1.8 Engine oil drain to be remotely located behind the rear axle to the side or the rear of the unit, easily accessible and properly labeled. To include a ¼-turn ball valve with cap or plug
- 1.9 Engine oil dipstick to be easily accessible for ground personnel.
- 1.10 Starting Aids:
  - 1.10.1 To be air intake grid heater or glow plug system or automatic electronic ether single shot canister type.
    - 1.10.1.1 If ether single shot system to be *KBI Dieselmatic* or *TURNER Quick Start*.
    - 1.10.1.2 If automatic ether system, to include an engine safety sensor switch.
    - 1.10.1.3 If automatic ether system, to be installed in engine compartment and to have maximum protection from the elements.
  - 1.10.2 Engine Block Heater: Immersion type, 110-Volt AC, of highest wattage as provided by OEM engine manufacturer. Plug to be located in area of engine oil dipstick.
- 1.11 Engine Enclosure:
  - 1.11.1 To be hinge mounted and hydraulically operated from the main and electric backup hydraulic systems.
  - 1.11.2 When in the open/raised position, there shall be easy access for all engine maintenance components in the engine compartment. Removal of main components by overhead crane without removal of engine cover shall be possible.
  - 1.11.3 Cover shall be designed with a safety feature to prevent leaking down or falling down when in the fully open position. This may be accomplished by use of an over center hinge system.
  - 1.11.4 A weather resistant, pendent control or momentary switch shall be provided to operate the enclosure’s hydraulic lift/lower system.
  - 1.11.5 Doors shall be provided in the engine cover for easy access to all controls, gauges and pre-operation checkpoints in the engine compartment without having to use the tilt system.

- 1.11.6 Steps may be necessary for access to engine compartment. If so, steps are to be grated in design and include adequate hand holds. Walk platforms shall include grating if exterior or anti-skid material if interior.

## 2.0 CHASSIS:

### 2.1 Design:

- 2.1.1 The hitch shall be adjustable for height variations of the towing vehicles.

- 2.1.1.1 (\*) The broom's design will be capable of adjusting the height of the 5<sup>th</sup> wheel for matching up to truck tractor's 5<sup>th</sup> wheel heights between 48 and 62 inches.

The broom has an adjustable parallel arm system using dual turnbuckles for height adjustment to level the broom frame. The adjustment ranges from 48 to 62 inches.

- 2.1.1.2 The State purchase order will provide the distance required.

- 2.1.2 (\*) Swing Clearance: A minimum of 55 inches is required with the broom in the transport position.

Broom swing clearance varies with fifth wheel height, but provides a swing clearance of 65 inches with the broom in transport position.

- 2.1.3 (\*) Tongue weight to be between 9,000 and 13,000 pounds and onto the fifth (5<sup>th</sup>) wheel in transport position. Tongue weight is 11,000 lbs.

- 2.1.4 To include truck trailer type landing legs, two (2) each, adjustable utilizing a hydraulically (electric over hydraulic is acceptable) powered jack stand for ease of hooking up and detaching from the tow vehicle.

- 2.1.5 (\*) Overall width, in transport position, is not to exceed 8½ (8'6").

Overall width in transport position is 8 foot 6 inches.

### 2.2 Rear Steer Axle:

- 2.2.1 Steering type with two (2) each pneumatic tired wheels (one tire each side).

- 2.2.2 (\*) Minimum steering angle to be minimum 40 degrees in each direction, from center. Steering angle is 40 degrees in each direction.

- 2.2.3 (\*) Rating: Minimum 26,000 pounds. Axle is rated at 26,000 pounds.

- 2.2.4 The system shall be closed type design, consisting of two (2) hydraulic cylinders mounted at the fifth (5<sup>th</sup>) wheel area, for the purpose of actuating two (2) hydraulic cylinders that are mounted on the steering axle.

- 2.2.5 The system pressure shall be supplied by the main hydraulic system on the unit while the engine is running or by an electric driven pump.

- 2.2.6 The rear axle shall be designed to work in coordination with the turning movement of the tow vehicle's fifth (5<sup>th</sup>) wheel plate.



- 2.2.7 The purpose of the system is to reduce the possibility of pulling the broom through the snow windrow of the tow vehicle plow.
- 2.2.8 This system shall also incorporate a realignment backup system, which will automatically maintain realignment of the rear axle with the front fifth (5<sup>th</sup>) wheel plate for coordination of the two.
- 2.2.9 Manual realignment / independent steering, shall be accomplished by a switch located in the broom's engine compartment.
- 2.2.10 There shall be an electric over hydraulic backup system, which can be utilized to accomplish the realignment if the engine is not running.
- 2.3 To be designed to prevent wheel splash and blowing snow from entering the engine compartment from under the machine.
- 2.4 Tires and Wheels:
  - 2.4.1 (\*) Tires, load rated, R22.5, 16-ply rated, all season, tubeless, minimum.  
Tires are 445/65R22.5 24 ply rated all season.
  - 2.4.2 Wheels to be heavy-duty disc type (California style are not acceptable).
  - 2.4.3 Spare Tire and Wheel: **(Optional Item. Refer to Price Schedule.)**
    - 2.4.3.1 Mounted spare tire and wheel, same as described above.
    - 2.4.3.2 When ordered, spare is to be shipped loose.
- 2.5 Mud Flaps: To provide a maximum distance above ground level of 12 inches front and rear of fenders, if fenders do not come within 12 inches of ground level.
- 2.6 Brakes:
  - 2.6.1 To be ABS, compliant with FMVSS 121 for trailers.
  - 2.6.2 To have dual circuit pneumatic brakes on rear axle.
  - 2.6.3 Air tank(s) to be equipped with quick-drain to drain moisture from tank. Quick-drain control lanyard to be easily accessible by ground personnel.
  - 2.6.4 Brake glad hands with color coded hoses to be permanent mounted at central forward fifth (5<sup>th</sup>) wheel area location.
- 2.7 Weight Transfer System:
  - 2.7.1 (\*) To maximize vehicle tractive effort, braking, steerability, and overall handling of the broom chassis, the broom chassis shall carry approximately 40 percent of the broom weight by utilizing a weight transfer system.  
A pair of hydraulic cylinders supports the parallel arms of the hitch. Pressure in the hydraulic cylinders provides the lift necessary to transfer approximately 40% of the broom weight to the chassis. A control valve adjusts the oil in and out of the cylinders to provide the same weight transfer no matter what the surface irregularities.

- 2.7.2 A pair of hydraulic cylinders shall support the parallel arms of the hitch.
- 2.7.3 Pressure in the hydraulic cylinders shall provide the lift necessary to transfer approximately 40 percent of the broom weight to the chassis.
- 2.7.4 A control valve adjusts the oil in and out of the cylinders to provide the same weight transfer no matter what the surface irregularities.
- 2.8 **GROUND SPEED CONTROL: (Optional Item – Refer to Price Schedule.)**
  - 2.8.1 The Ground Speed Control system shall automatically adjust the brush rotational speed depending on the speed of the vehicle. As the vehicle speed increases the broom speed shall also increase, a reduction in vehicle speed will also cause the broom speed to be reduced.
  - 2.8.2 There shall be a minimum of six preset ranges for the operator to select from depending on sweeping conditions.
  - 2.8.3 As the brush becomes shorter with use the Ground Speed Control system shall also have the ability to adjust broom rotational speed in order to maintain a constant brush tip speed.
  - 2.8.4 This system will also include a broom rotational speed tachometer.
  - 2.8.5 The system will incorporate a manual override that is selectable from the cab of the towing vehicle.

### **3.0 ELECTRICAL SYSTEM:**

- 3.1 12 or 24 volt negative ground system.
- 3.2 Battery(s): Highest factory CCA available, 1000 CCA minimum at zero degrees Fahrenheit. Permanently sealed type.
- 3.3 Alternator: 110 amp (12 volt) or 55 amp (24 volt) minimum.
- 3.4 Single high ampere master electric switch to cut off power source from battery to the ground (ground side if possible, positive if not) and remainder of electrical system, *COLE HERSEE #284-02* or *POLLACK 51-315*.
- 3.5 Circuits:
  - 3.5.1 Protected by circuit breakers or fuses, opening at 50 percent of overload unless otherwise protected by the electronic control system.
  - 3.5.2 Circuits to match type of volt or ampere system requirements.
- 3.6 Lighting:
  - 3.6.1 Broom Work Lights:
    - 3.6.1.1 Two (2) each, 50 watt halogen, rubber mounted, adjustable, lights installed on the main frame to illuminate the broom working area.
    - 3.6.1.2 These lights are to face rearward and ahead of broom assembly.

- 3.6.2 Strobe Lights:
  - 3.6.2.1 Two (2) each, *WHELEN* L31H LED.
  - 3.6.2.2 Left (streetside) lens to be amber and right (curbside) lens to be blue, in color.
  - 3.6.2.3 To be mounted above the highest point of the unit on the rear top outside areas of the engine housing and be shielded from view of the towing vehicle operator.
  - 3.6.2.4 To include a remote photocell with automatic intensity adjust.
  - 3.6.2.5 To include an ON/OFF switch on the tow vehicles remote control box panel or on the rear broom engine control panel box.
- 3.6.3 Systems FMVSS lighting to be powered by tractor truck's 12 volt electrical system.
  - 3.6.3.1 Stop, turn, and taillights to be *GROTE* Model SuperNova 10 diode pattern or *TRUCK-LITE* equivalent, minimum four (4) inch diameter, rubber mounted.
  - 3.6.3.2 Back-Up Light(s): To be *GROTE* Model 61971 LED or *TRUCK-LITE* Model 44 with 54 Diode pattern or an adjustable 6x4 inch 35 watt sealed beam halogen.
  - 3.6.3.3 Marker Lights:
    - 3.6.3.3.1 To be LED, hermetically sealed cartridge for ease of service and durability.
    - 3.6.3.3.2 Position light(s) at each end of the broom assembly, amber forward and red to the rear.
    - 3.6.3.3.3 A cluster of three (3) each red lights are to be located at top rear of engine compartment.
- 3.6.4 Engine Compartment Work Light(s):
  - 3.6.4.1 For when the engine enclosure is down. Light(s) are to provide adequate light for night time maintenance checks.
  - 3.6.4.2 Switch(es) are to be easily accessible.
- 3.7 Chassis Wiring:
  - 3.7.1 Suitable fasteners, spaced to assure adequate attachment to prevent damage to the wires, shall support wiring installed in the undercarriage.
  - 3.7.2 All undercarriage wiring to be continuous length and without splices, plug connectors, or terminal blocks.
  - 3.7.3 All wiring entrance holes in chassis and body shall be provided with suitable grommets or bushings, and anti-chafing protection.
  - 3.7.4 All exposed wiring to be protected by loom or conduit or sheathing.

- 3.7.5 All lighting, switches, sensors, wires and connectors shall be weatherproof and corrosion resistant.

#### **4.0 INSTRUMENTATION, GAUGES AND CONTROLS:**

- 4.1 All controls and control circuits to be designed to prevent damage to equipment if control is inadvertently activated out of normal operating sequence.
- 4.2 Engine compartment area to include the following instrumentation, gauges, and controls, minimum, in a moisture proof enclosure to allow maintenance personnel to check unit from ground level:
- 4.2.1 Control box is to be LCD, to including; engine start/stop, all gauges, menus, and engine diagnostics, as a minimum.
  - 4.2.2 Any and all gauges that show pressure, temperature, etc., are to be in U.S.A. measurements such as PSI, Fahrenheit, etc.
  - 4.2.3 All wording shall be in U.S.A. English.
  - 4.2.4 Engine Hour Meter: Running engine activated.
  - 4.2.5 Engine start and stop switch.
  - 4.2.6 Engine emergency stop switch.
  - 4.2.7 Engine oil pressure gauge.
  - 4.2.8 Engine coolant temperature gauge.
  - 4.2.9 Engine shut-down (specific reason for) indicator lights.
  - 4.2.10 Ammeter or voltmeter gauge.
  - 4.2.11 Hydraulic system temperature gauge.
  - 4.2.12 Fuel level gauge.
  - 4.2.13 Mode Switches:
    - 4.2.13.1 Sweep/Broom.
    - 4.2.13.2 Air Nozzle(s).
    - 4.2.13.3 Transport.
    - 4.2.13.4 Sweep/broom and air
  - 4.2.14 Ground Speed Control override switch.
  - 4.2.15 Controls for broom functions including; angle (left/right), raise/lower, and position for transport. (This can not be overridden by the towing chassis control box when in "Service" mode.)
  - 4.2.16 Air blower functions including; up/down, and left/right.
  - 4.2.17 Axle steering correction control.
  - 4.2.18 Broom work lights switch.

4.2.19 Strobe lights “HIGH/OFF/LOW” switch.

4.2.20 Engine compartment light(s) switch.

4.3 Towing Chassis Control Box:

Depending on the chassis, will determine whether the chassis control station for the broom will have a remote control box (conventional chassis or similar) or an integrated control station (Oshkosh HT).

4.3.1 The “main” operator’s control in the chassis cab shall have a Monitor, Diagnostic and Control (MDC) station for the broom and air blower.

4.3.1.1 It shall use a seven (7) inch minimum color liquid crystal display screen and use CAN (Controller Area Network) serial bus system technology.

4.3.1.2 As stated, the MDC station must incorporate diagnostics which displays what is wrong with a particular system.

4.3.1.3 All systems for the broom and broom engine must be part of the diagnostics.

4.3.1.4 All functions and displays must be in easy reach of the operator and integrated into the chassis instrumentation. (Or: The main MDC station shall be a non-integrated removable control box at the top of a pedestal with base plate capable of mounting to the tow vehicle cab floor.)

4.3.2 For all functions of broom and blower on a flexible lead, for in-the-cab towing vehicle control, fully instrumented for broom and engine including. (Supplied drawing and/or photo of remote control box that will be provided).

4.3.2.1 Control boxes are to be LCD, to including; all gauges, menus, and engine diagnostics, as a minimum.

4.3.2.1.1 Engine start switch is not to be included.

4.3.2.1.2 Engine emergency stop switch.

4.3.2.1.3 Engine speed indicator, in RPM.

4.3.2.1.4 Engine oil pressure gauge and/or warning light.

4.3.2.1.5 Engine coolant temperature gauge and/or warning light

4.3.2.1.6 Alternator gauge and/or warning light.

4.3.2.1.7 Hydraulic system temperature gauge and/or warning light.

4.3.2.1.8 Broom speed, RPM, control.

4.3.2.1.9 Broom speed indicator.

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4.3.2.1.10 Joystick for broom functions including; angle (left/right), raise/lower, and position for transport.

4.3.2.1.11 Broom position indicator.

4.3.2.1.12 Fuel level gauge and/or low fuel warning light.

4.3.3 Control Cables/Leads and Connections:

4.3.3.1 The unit shall be supplied with the following cables and connections to allow the remote control box to be installed in the cab of a tow vehicle with the cable/lead running from the back of the tow vehicle to the runway broom unit:

4.3.3.1.1 Remote control box to be equipped with a pigtail type cable with plug-in connector, approximately eight (8) foot in length.

4.3.3.1.1.1 Note: This length may be shorter depending on where the control box will be located in the cab. This length will be determined prior to build, eight (8) foot used for purposes.

4.3.3.1.2 A connector (to accept the remote control box plug-in and the main cable/lead receptacle) shall be supplied for installation, by State personnel, as a permanent receptacle at the back of the tow vehicle. Both the inside and outside position to include protective moisture proof caps that are to have a tether attached to prevent loss.

4.3.3.1.3 The main cable/lead shall be 16 foot in length, without splices between the tow vehicle cab and the runway broom unit. It will connect to the control box located in the cab, and it will also have male/female connectors at the point it makes contact with the runway broom at the fifth (5<sup>th</sup>) wheel area. This is to allow for easy and quick replacement, in case of damage. This cable shall incorporate a "break-away" in-line coupler. Note: This length may be shorter depending on where the control box will be located in the cab. This length will be determined prior to build, sixteen (16) foot was used for bid purposes.

4.3.3.1.4 The cable/lead, with receptacle, running from the front of the runway broom unit to the rear control panel shall be enclosed for maximum protection.

4.3.3.1.4.1 Woven loom minimum.

4.3.3.1.4.2 Split loom is not acceptable.

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- 4.3.3.1.5 Rear engine area control panel to include a receptacle to accept remote control box pigtail, for testing purposes. This receptacle is to include a protective moisture proof cap that has a chain or cable attached to prevent loss.
- 4.3.3.1.6 All cables/leads to be; flexible to minus 50 degrees Fahrenheit, properly sheathed, and moisture resistant.
- 4.3.3.1.7 All connectors to be quick disconnect type.
- 4.3.3.1.8 All connections, connectors, and receptacles are to be corrosion resistant and moisture resistant.
- 4.3.4 Control boxes to be moisture proof enclosures.
- 4.3.5 SPARE CONTROL BOX: **(Optional Item – Refer to Price Schedule.)**
  - 4.3.5.1 To include one (1) each spare control box complete with eight (8) foot of cable and plug-in connector. Note: This length may be shorter depending on where the control box will be located in the cab. This length will be determined prior to build, eight (8) foot used for bid purposes.
  - 4.3.5.2 To include one (1) each spare complete with a 16 foot control cable with connectors.
    - 4.3.5.2.1 Note: This length may be shorter depending on where the control box will be located in the cab. This length will be determined prior to build, sixteen (16) used for purposes.
  - 4.3.5.3 To be assembled and ready for immediate installation.
- 4.4 All switches, gauges, and controls to be properly lighted for day or night operation (a flexible cable night light type light is not acceptable).
  - 4.4.1 All gauges to be back lighted type.
- 4.5 All switches, gauges, and controls to be properly identified by engraved type identification or electronic.
  - 4.5.1 *DYMO* type tape labels not acceptable.
  - 4.5.2 Stick-on type labels not acceptable, unless OEM part number identified in OEM parts book.
  - 4.5.3 Engraved type labels are to be secured using screws, bolts, or rivets.
- 4.6 All switches, gauges, and controls for engine operation shall be shock mounted with easy accessibility to the wires and lines that operate said switches, gauges, and controls.

## 5.0 HYDRAULIC SYSTEM:

- 5.1 The hydraulic system shall conform to SAE J-931.
- 5.2 The hydraulic pump(s) are to be of the heavy-duty type and be directly driven by the engine and are to have sufficient capacity to operate all hydraulic equipment specified herein under all operating conditions and speeds.
  - 5.2.1 Pump(s) may be mounted to an engine mounted power-take-off gearbox.
    - 5.2.1.1 Clutch or driveshaft installations between engine and pump are not acceptable.
- 5.3 (\*) To provide 4000 pound foot of torque at the broom shaft at a maximum hydraulic pressure of 5075 PSI for maximum snow moving capabilities. Engineering hydraulic power calculations confirming these values provided with the bid. OEM technical specifications for the hydraulic pump and motor supplied with the bid.  
Engineering hydraulic power calculations which confirm that the broom meets or exceeds the requirements were included with the bid. OEM technical specifications for the pump and motors were included with bid.
- 5.4 To include a variable or hydrostatic pump and hydrostatic motor(s) of sufficient size and output to meet all performance requirements.
  - 5.4.1 (\*) Hydraulic pump(s) and motor(s) (each with a 100cc capacity) are to be USA manufactured and have warranty and service centers in Anchorage, as a minimum.  
Hydraulic pumps and motors are manufactured in the USA. Warranty and service available through:  
Alaska Hydraulics, Inc.  
500 West Potter  
Anchorage, AK 99518  
Telephone: 907-562-2217
- 5.5 All hydraulic positioning functions (broom head lift, broom head swing, broom cradle, deflector, and air nozzle operation) shall be equipped with a hydraulic position locking system.
- 5.6 A counterbalance valve shall be used for broom lift (if required) and a pilot operated check valve for the other functions.
- 5.7 Broom Hydraulics:
  - 5.7.1 To be independent of blower drive and designed so that broom and blower may be used together or independently of each other with separate "on/off" switches.
  - 5.7.2 (\*) Broom to be driven by hydraulic motors connected directly to the end of broom core and be protected from damage if hitting objects or being struck by other equipment.



Broom is driven by two hydraulic motors operating through planetary gears connected directly to the broom core. The motors and gear boxes are mounted within the inner diameter of the broom head outer ends which provides protection.

5.7.2.1 Mechanical drive lines, chain couplers, gearboxes, or drive belts, are not acceptable. The *M-B COMPANY* planetary drive at the core end is acceptable.

5.7.3 Broom Speed:

5.7.3.1 To be hydraulically controlled by means of a remote control box.

5.7.3.2 (\*) Operator control box variable from 0 to minimum 625 RPM working speed.

Broom working speed from 0 to 625 RPM provided.

5.8 Air Blower System Hydraulics:

5.8.1 To be independent of broom drive and designed so that broom and blower may be used together or independently of each other with separate "on/off" switches.

5.8.2 To include a variable or hydrostatic pump and hydrostatic motor(s) of sufficient size and output to meet all performance requirements.

5.8.3 Blower(s) is/are to be driven by hydraulic motor(s) connected directly to the end of the blower shaft or by utilizing an oil immersed splined drive coupling.

5.8.4 Mechanical drive lines, chain couplers, gearboxes, drive belts or shot clutches are not acceptable.

5.9 Hydraulic Reservoir Tank:

5.9.1 (\*) Capacity shall provide not less than 120 percent of the volume of oil required for operation of the hydrostatic system. On a closed circuit system requiring a main pump and a second or auxiliary pump to feed oil into the hydraulic system, the volume will be based on the main and second or auxiliary pumps.

Capacity of reservoir is 54 gallons which is more than 120 percent of the quantity required by the hydrostatic system.

5.9.2 To include a filler neck with easily removable (no tools) strainer basket. Filler to be located inside the engine compartment.

5.9.2.1 An air vent shall be incorporated in the filler cap (unless pressurized system). Air vent to be located inside the engine compartment.

5.9.3 To include a one (1) inch drain plug.

- 5.9.4 A one-quarter (1/4) turn ball type shut-off valve on suction and return lines will be provided. The valve handles shall be tie-wrapped in the open position.
- 5.9.5 Suction outlet shall include a 100 mesh filter inside the tank.
- 5.9.6 To include sight gauge with thermometer.
- 5.9.7 To include clean-out access plate(s) on reservoir(s).
- 5.10 Hydraulic tubes, hoses and fittings used shall conform to SAE J514, J516, J517 and J524. A minimum number of fittings, joints and connections shall be used to prevent excessive back-pressure, vibration and leakage. Hydraulic lines shall be of sufficient size to permit free flow of hydraulic fluid at temperatures down to minus 50 degrees Fahrenheit.
- 5.11 Hydraulic Filters:
  - 5.11.1 All elements where applicable to be spin-on type or in-the-tank.
  - 5.11.2 In-line filters, when necessary to prevent excessive oil loss when changing of filter(s), to be plumbed with ball valves on each side of the filter. The valve handles shall be tie-wrapped in the open position.
- 5.12 REARVIEW CAMERA: **(Optional Item – Refer to Price Schedule.)**
  - 5.12.1 A black and white backup camera with a wide angle lens shall be positioned on the upper rear of the unit activated automatically when the transmission is placed into reverse.
  - 5.12.2 To include a flat LCD non-glare screen monitor with a minimum diagonal size of seven (7) inches shall be positioned in the tow vehicle cab, positioned for easy viewing. Viewing shall be within a maximum time of two (2) seconds after the transmission is shifted into reverse.

## **6.0 BROOM SYSTEM:**

- 6.1 General: Unit will be towed by a tractor truck utilizing a rigid 5<sup>th</sup> wheel plate.
- 6.2 **Base Unit:**
  - 6.2.1 (\*) To be a eighteen (18) foot two (2) piece broom core with 46 inch in diameter broom wafers.  
Two nine foot sections comprise the 18 foot core. It is designed to use 46 inch flat wafers with spacers.
  - 6.2.2 (\*) The broom shall provide a minimum 18 foot sweeping width at 0 degrees. Sweeping path of broom at zero degrees in 18 foot.
  - 6.2.3 Wafers:
    - 6.2.3.1 Base Unit: Brush fill to be mixed (50/50) alternating sections of polypropylene and steel wire.
      - 6.2.3.1.1 The poly bristles (8.0 pound) shall be 60/1000 x 90/1000 (0.060 x 0.090) inch oval shape.

- 6.2.3.1.2 The wire (10 pound) shall have an average diameter of 18/1000 (0.018) inch, galvanized or stainless steel.
- 6.2.3.1.3 **SPARES:** One (1) each full set of poly and one (1) each full set of wire shall be included (shipped loose, not mounted).
- 6.2.3.2 **BASE UNIT OPTIONAL POLY WAFERS (Refer to Price Schedule):**
  - 6.2.3.2.1 In lieu of 50/50 poly/wire, brush fill to be 100 percent poly bristles (8.0 pound) shall be 60/1000 x 90/1000 (0.060 x 0.090) inch oval shape.
  - 6.2.3.2.2 **SPARES:** One (1) each full set of poly wafers shall be included (shipped loose, not mounted).
- 6.2.3.3 **BASE UNIT OPTIONAL WIRE WAFERS (Refer to Price Schedule):**
  - 6.2.3.3.1 In lieu of 50/50 poly/wire, brush fill to be 100 percent wire bristles (10.0 pound) with an average diameter of 18/1000 (0.018) inch, galvanized or stainless steel.
  - 6.2.3.3.2 **SPARES:** One (1) each full set of wire wafers shall be included (shipped loose, not mounted).
- 6.2.3.4 Contractor is required to supply means to assist in replacement of brushes.
  - 6.2.3.4.1 Two (2) each carts, with caster wheels, must be provided for each broom core section. No other special tools are to be required.
- 6.3 **OPTIONAL 20 FOOT BROOM LENGTH (IN LIEU OF 18 FOOT) (Refer to Price Schedule):**
  - 6.3.1 (\*) To be a twenty (20) foot two (2) piece broom core with 46 inch in diameter broom wafers.  
Two ten foot sections comprise the 20 foot core. It is designed to use 46 inch flat wafers with spacers.
  - 6.3.2 (\*) The broom shall provide a minimum 20 foot sweeping width at 0 degrees. Sweeping path of broom at zero degrees is 20 foot.
  - 6.3.3 **Wafers:**
    - 6.3.3.1 Brush fill to be mixed (50/50) alternating sections of polypropylene and steel wire:
      - 6.3.3.1.1 The poly shall be eight (8.0) pound shall be 60/1000 x 90/1000 (0.060 x 0.090) inch oval shape.
      - 6.3.3.1.2 The wire (10 pound) shall have an average diameter of 18/1000 (0.018) inch, galvanized or stainless steel.

- 6.3.3.1.3 **SPARES:** Two (2) each full sets of poly and two (2) each full sets of wire shall be included (shipped loose, not mounted).
- 6.3.3.2 **BASE UNIT OPTIONAL POLY WAFERS (Refer to Price Schedule):**
  - 6.3.3.2.1 In lieu of 50/50 poly/wire, brush fill to be 100 percent poly bristles (8.0 pound) shall be 60/1000 x 90/1000 (0.060 x 0.090) inch oval shape.
  - 6.3.3.2.2 **SPARES:** One (1) each full set of poly wafers shall be included (shipped loose, not mounted).
- 6.3.3.3 **BASE UNIT OPTIONAL WIRE WAFERS (Refer to Price Schedule):**
  - 6.3.3.3.1 In lieu of 50/50 poly/wire, brush fill to be 100 percent wire bristles (10.0 pound) with an average diameter of 18/1000 (0.018) inch, galvanized or stainless steel.
  - 6.3.3.3.2 **SPARES:** One (1) each full set of wire wafers shall be included (shipped loose, not mounted).
- 6.3.3.4 Contractor is required to supply means to assist in replacement of brushes.
  - 6.3.3.4.1 Two (2) each carts, with caster wheels, must be provided for each broom core section. No other special tools are to be required.
- 6.4 **OPTIONAL 20 FOOT BROOM WITH S.I.B. CORE (Optional Item – Refer to Price Schedule):**
  - 6.4.1 (\*) To be a twenty (20) foot, one (1) piece tubular *S.I.B.* core (with 46 inch brush diameter).  
A single, one piece, 28 row, SIB cassettes style, 20 foot X 46 inch diameter core shall be provided. The core shall be dynamically balanced.
  - 6.4.2 (\*) Brush cassettes to be S.I.B. 45/1000 (0.045) millimeter steel wire brush. The bristles shall be SIB cassette style 0.018" wire.
  - 6.4.3 (\*) Brush strip core replaceable inserts to be S.I.B. poly fastened to the core. The core shall have replaceable plastic inserts in the "T" slot.
  - 6.4.4 (\*) The broom shall provide a minimum 20 foot sweeping width at 0 degrees. The broom shall provide a 20 foot swept path at 0 degrees.
  - 6.4.5 (\*) Broom head must be capable of being angled a minimum of 32 degrees, to either side.  
The M-B broom has a working angle of 35 degrees to either side.
  - 6.4.6 (\*) Broom Diameter: To be 46 inches. The brush diameter is 46 inches.
  - 6.4.7 Broom lift, rotation and angling will be accomplished hydraulically.

- 6.4.8 Broom assembly to include manually adjustable broom hood/cover and hydraulically adjustable snow deflector.
- 6.5 Brush and Brush Drive:
- 6.5.1 Brush shall be rotating horizontal cylinder(s) as required, replaceable core type with bearings and supports at both ends.
- 6.5.2 The brush shall be driven by two (2) hydrostatic drive motors, end mounted to properly distribute drive torque through the broom head.
- 6.5.2.1 (\*) Core(s) is/are to be dynamically balanced.  
The M-B broom cores are dynamically balanced individually to acceptable values at rated RPM.
- 6.5.3 Brushes shall have the necessary degree of freedom to follow changes in elevation of the pavement being swept, while sweeping either left or right at the rated sweeping speed.
- 6.5.4 Brushes shall sweep the same path whether angled left or right.
- 6.5.5 Wafer style bristle shall be fastened in a radial wafer utilizing a neoprene liner to dissipate heat and cushion shock loads generated from sweeping.
- 6.5.5.1 All wafers shall be within a 50 ounce-inches static balance and marked at the heavy location.
- 6.5.6 Brush Replacement:
- 6.5.6.1 The assembly shall permit field replacement of brush inserts with maximum ease without special hand tools.
- 6.5.6.2 S.I.B. cores shall not be required to be removed to replace brushes.
- 6.5.6.3 If core(s) must be removed to replace brushes, contractor must supply means to assist in replacement of brushes.
- 6.5.6.3.1 Two (2) each carts, with caster wheels, must be provided for each broom core section. No other special tools are to be required.
- 6.5.6.3.2 SPARES: Additional, two (2) each, cores (left and right if applicable) are required.
- 6.5.7 A hydraulic elevation mechanism shall provide adequate ground clearance for transport when not in use.
- 6.5.7.1 (\*) When in transport position, the caster wheels shall be off the ground and weight of the broom head assembly shall rest on a hook system and not rely on the lift cylinders for support.  
When in transport position, the broom head is mechanically locked. The weight of the broom head is supported using two hooks mounted on the broom frame. The casters are raised off the payment.

- 6.5.8 An easily accessible fine height adjustment shall be provided to compensate for brush wear.
- 6.6 Hood and Deflector:
  - 6.6.1 A heavy gauge sheet steel brush hood shall be secured to the brush frame and be adjustable to within 1/4 (0.25) inch of the brush bristles.
  - 6.6.2 The hood shall be designed to prevent ice buildup during freezing slush removal operations at rated speeds.
  - 6.6.3 The adjustable hood shall incorporate an adjustable and replaceable snow stripper to prevent carry over of snow and clogging of snow in heavy snow conditions.
  - 6.6.4 A snow deflector shall be mounted on the front of the brush hood and be capable of changing the angle at which snow leaves the brush.
    - 6.6.4.1 The deflector's angle is to be controlled automatically or hydraulically adjusted from the operator's seated position from within the cab.
    - 6.6.4.2 The deflector is to be designed to effectively control the elevation angle of discharge from the broom to prevent excessive buildup of snow on the machine or ingestion of snow into the engine air intake, air blast intake, engine radiator, charge air coolers, and hydraulic oil coolers.
- 6.7 **POWERED SNOW SHED (Optional Item –Refer to Price Schedule):**
  - 6.7.1 The unit shall be equipped with a hydraulically operated snow shed.
    - 6.7.1.1 The snow shed shall be designed to cover the entire top surface of the broom head. It shall be hinged at the front edge and a system of hydraulic cylinders and valves shall operate it.
    - 6.7.1.2 The broom deflector hydraulic cylinders shall connect to the snow shed assembly.
    - 6.7.1.3 The top surface of the snow shed shall be constructed of a poly material connected to a steel frame.
    - 6.7.1.4 The snow shed shall rotate forward a minimum of 100 degrees to effectively dump the accumulated snow.
    - 6.7.1.5 Control system
      - 6.7.1.5.1 The snow shed shall have an automatic and manual mode.
      - 6.7.1.5.2 The automatic and manual functions shall be selectable from the joy stick and from the control screen. Additionally the control box will have dedicated switches for dumping and stowing the snow shed.

- 6.7.1.5.3 When in manual mode the system will proceed with each step of the cycle with each separate command from the operator.
- 6.7.1.5.4 When in automatic mode the system will follow the programmed cycle.
  - 6.7.1.5.4.1 Raise the deflector to the full up position.
  - 6.7.1.5.4.2 Dump the snow shed.
  - 6.7.1.5.4.3 Stow the snow shed.
  - 6.7.1.5.4.4 Lower the deflector to an approximately level position.
- 6.8 Caster Wheels:
  - 6.8.1 The broom shall have a minimum of two (2) caster wheel assemblies with dual or single tires located behind the head and inside the sweeping path.
    - 6.8.1.1 Dual wheel design must oscillate as well as swivel.
    - 6.8.1.2 If dual wheel system, to insure load is distributed evenly, axle must oscillate a minimum of five (5) degrees left and right of center.
    - 6.8.1.3 On 20 foot brooms (when ordered), there shall be four (4) single tire caster assemblies.
  - 6.8.2 Casters shall be of the full 360 degree revolving type with shimmy dampers as needed or incorporating swivel detent locks in lieu of a system that automatically lifts the broom when the broom starts to go in reverse (backing up) is acceptable.
  - 6.8.3 To be located behind the broom head and inside the sweeping path.
  - 6.8.4 Hubs must be de-mountable with steel rims.
  - 6.8.5 Tires:
    - 6.8.5.1 Tires shall be two (2) sets, 5.00x8 (12PR), minimum.
    - 6.8.5.2 To be radial pneumatic type, 180/70R8 (16 ply rated).
    - 6.8.5.3 To include tubes.
  - 6.8.6 SPARES: **(Optional Item –Refer to Price Schedule.)**
    - 6.8.6.1 To include one (1) each additional complete caster wheel assembly ready for bolt-on to the anti-shimmy damper.
      - 6.8.6.1.1 This includes pneumatic tires which are mounted onto the wheels, which are mounted to the hubs, which include bearings, which are mounted onto the axles, etc.

6.8.6.1.2 Mounting hardware, nuts, bolts, washers, etc. are to be included.

6.9 Broom Pattern Adjustment:

6.9.1 Manual adjustment of the broom pattern shall be accomplished using controls mounted on the broom head. Manual adjustment of the broom pattern shall not be permitted from the operator's station in the tow vehicle.

6.9.2 Automatic Broom Pattern Control:

6.9.2.1 In addition to the manual system brush pattern adjustment, the unit is to include an automatic broom pattern control with adjustment.

6.9.2.2 To include a three (3) position momentary switch in the control box mounted on the broom head. Toggle forward shall increase the pattern in predetermined increments. Toggle back and the pattern decreases in predetermined increments. The center position of the toggle is the run position.

6.9.2.2.1 These broom pattern adjustments can be achieved in the cab while moving and without raising the broom head.

6.9.2.3 An additional three (3) position pattern control switch located at the broom head for control from outside.

6.9.2.4 When the switch is in the run position, a time based system shall be used to readjust the broom pattern by counting the time in the broom down position.

6.9.2.5 When the preset time is reached, the broom head will index down a preset amount. At that time the timer is reset and restarts counting. Time running in the up mode is not counted.

6.9.2.6 Manually adjusting the pattern from the cab or broom head will reset the timer.

6.10 To include an electric over hydraulic system to raise and cradle the broom head in the event of engine failure. The switch or control for this function shall be located on the engine area control box.

**7.0 PERFORMANCE TESTING (BROOM):**

7.1 Must be able to sweep at speeds up to 35 MPH with head angled 30 to 35 degrees, with a strike pattern of three (3) to four (4) inches.

7.2 With broom in working position, broom must satisfactorily function with speeds up to 35 MPH, while sweeping a minimum of one (1) inch of fresh snow, with snow density of approximately 25 pounds per cubic foot.



- 7.3 Cycle time:
- 7.3.1 Broom raise time is not to exceed 10 seconds.
  - 7.3.2 Broom lower time not to exceed 10 seconds.
  - 7.3.3 Broom swing time not to exceed 15 seconds from 30 degrees right of center to 30 degrees left of center, and visa versa.
  - 7.3.4 Automatic to raise from down position to four (4) inches above ground to be a maximum time of four (4) seconds.
- 7.4 Sequencing of broom head and blower nozzle:
- 7.4.1 Broom head raise and lower to be simultaneous with or before blower nozzle.
- 7.5 The above requirements may be tested by the State prior to acceptance.

## **8.0 FORCED AIR BLOWER SYSTEM:**

- 8.1 (\*) The forced air blower system shall be a dual or single centrifugal impeller type.  
Forced air blower system uses two impellers each with its own nozzle.
- 8.2 Nozzle or nozzles shall blow in the same direction at any given time. Deflector nozzle or channels shall direct the flow to one side or the other.
- 8.3 Air Intake(s):
- 8.3.1 To be located and designed to prevent ingestion of debris, including ice, which may damage the blower.
- 8.4 (\*) Output total capacity shall be a minimum of 23,000 CFM air volume at 400 MPH rated at outlet side of blower(s). Output capacity is 23,040 CFM @ 410 MPH.
- 8.5 Minimum air velocity rated at each outlet nozzle (with only one [1] outlet nozzle operating) to be 320 MPH measured at a distance of 12 inches from nozzle outlet exterior while broom is under load.
- 8.5.1 (\*) Velocity requirement certified by an independent test facility and submitted with bid. Tests must be done at outlet nozzle.  
Velocity and volume certification included with bid.
- 8.6 The blower nozzle(s) control shall be directional, left, right, or off and interlocked with the broom head able to always blow in the direction of broom casting.
- 8.7 A system for raising the nozzle(s) up to a minimum of 8.5 (8½) inches above level ground for travel shall be provided.
- 8.7.1 (\*) The nozzle(s), when raised up for travel, shall keep the transport width within the 102 inch (8'6") travel width requirement.  
Transport width is 102 inches.
- 8.8 The blower(s) shall be the centrifugal type with dual or single outlet(s).
- 8.9 An operator controlled blower drive disconnect shall be installed to permit blowing with or without broom operation.

## **9.0 TRAINING: (Optional Item – Refer to Price Schedule.)**

- 9.1 The vendor shall provide a factory certified instructor(s) within 30 days of acceptance by the State. This (these) representative(s) shall be prepared and qualified to make all necessary adjustments to the unit and give instruction to the operators to assure correct operation of the unit when it is placed in service.
- 9.2 The vendor shall provide a qualified factory trained service representative(s) to be in attendance when the unit is delivered.
- 9.3 The representative(s) shall be prepared and qualified to make all necessary adjustments to the unit and give instruction to the operators to assure correct operation of the unit when it is placed in service.
  - 9.3.1 Travel labor will only be reimbursed for travel from Anchorage, Fairbanks, or Juneau to the 'Assigned Location' as per Section V – Price Schedule. Travel labor will only be reimbursed for the time the employee is traveling within Alaska.
    - 9.3.1.1 Mileage charge, as per Section V – Price Schedule, will only be reimburse for travel within Alaska.
    - 9.3.1.2 Meals are paid at actual and charges must be accompanied by receipts and are not to exceed the State authorized \$60.00 per day. Meals are only paid for time in Alaska.
    - 9.3.1.3 Transportation, such as airfare (coach), shall be reimbursed at actual and all charges are to be accompanied by a receipt/copy of the ticket. Transportation will only be paid for transportation within Alaska.
    - 9.3.1.4 Lodging shall be reimbursed at actual and shall not exceed \$100.00 per night unless no other lodging is available. Requests for reimbursement must be accompanied by a receipt. Lodging will only be paid for lodging within Alaska.
- 9.4 The contractor is responsible for the instructors being on time for the training.
- 9.5 Training to be done during Monday through Friday only.
- 9.6 Operator Training:
  - 9.6.1 To include a minimum of one (1) each 7 ½ (7.5) hour shifts.
  - 9.6.2 Operator training to include the following, as a minimum applicable agenda:
    - 9.6.2.1 Operating procedures per operating manual.
    - 9.6.2.2 Break-in procedures.
    - 9.6.2.3 Equipment limitations.
    - 9.6.2.4 Operator maintenance.
    - 9.6.2.5 Before operations checks and lubrication.
    - 9.6.2.6 Safety.

- 9.6.2.7 Cold weather operations.
- 9.6.2.8 Jump starting.
- 9.6.2.9 Welding on equipment.
- 9.6.2.10 Towing or transporting equipment.
- 9.6.2.11 Instruments and controls.
- 9.6.2.12 Gauge interpretation.
- 9.6.2.13 Equipment operation, Do's and Don'ts.
- 9.6.2.14 Attachment operation, Do's and Don'ts.
- 9.7 Mechanic Training (Journeyman level):
  - 9.7.1 To include a minimum of one (1) each 7 ½ (7.5) hour shifts.
  - 9.7.2 Mechanic training including the following theory, trouble shooting, and test procedures for, as a minimum applicable agenda:
    - 9.7.2.1 Electronics.
    - 9.7.2.2 Electrical.
    - 9.7.2.3 Hydraulics.
    - 9.7.2.4 Air system.
    - 9.7.2.5 Drive train information relating to machine operation.
    - 9.7.2.6 Engine and transmission electronics relating to machine operation.

## **10.0 MISCELLANEOUS:**

- 10.1 Shipping: When over water, the unit will be shipped 'under deck' to prevent salt spray damage. For example: From Seattle to Anchorage, Totem Ocean Trailer Express. Also refer to Section III – Special Terms and Conditions.
- 10.2 Weight Scale Ticket: As per Section III – Special Terms and Conditions.
- 10.3 Dimensions:
  - 10.3.1 (\*) Transport Width: 9'7" (115 inches) maximum.  
Transport width is 102 inches.
  - 10.3.2 (\*) Length: From center of fifth (5<sup>th</sup>) wheel pin to rear of unit, in working position, to be 42 feet maximum.  
Length from center of fifth wheel pin to rear of unit is 38.25 feet for a 20 foot broom, 2 foot less with an 18 foot broom.
  - 10.3.3 Removal of any component, to meet any of these dimensions, is not acceptable.
- 10.4 Paint: Chrome Yellow meeting FAA requirements. To include appropriate primer.

- 10.5 Winterization: Entire unit to be winterized to provide satisfactory performance in temperatures to minus 50 degrees Fahrenheit.
- 10.6 Warranty: To be full (100%) 5-year (60 month). Refer to Section V – Special Terms and Conditions.
- 10.7 Publications: **(Optional Item –Refer to Price Schedule.)**
  - 10.7.1 One (1) set of parts and service manuals to be supplied per Section III - Special Terms and Conditions.
    - 10.7.1.1 Parts books are to contain cross references between the required OEM and vendor or suppliers part number.
    - 10.7.1.2 Service manuals must cover all component tear down and testing. To include service, inspection interval and lube charts.
    - 10.7.1.3 Parts and service manuals will be provided for but not limited to, Engine and Engine Electronics, Gear boxes, Fire suppression system, Air Compressor, Hydraulic pumps, Hydraulic Motors and Hydraulic valves.
  - 10.7.2 Also to be provided is four (4) each operator's manuals for each unit.
  - 10.7.3 Contractor will guarantee that purchaser is provided with any and all amendments to parts catalogs or service manuals for a period of three (3) years.
  - 10.7.4 Vendor may be required to supply samples of parts and service manuals.
- 10.8 Component Sourcing:
  - 10.8.1 Due to critical nature of vehicle mission and parts support, only current production componentry shall be supplied.
  - 10.8.2 (\*) The contractor shall provide assurance that only unused, newly manufactured components are supplied.  
M-B certifies that only unused, newly manufactured components will be used.
  - 10.8.3 (\*) In the bid package, the contractor and/or vehicle manufacturer certifies that the engine(s), hydrostatic transmission(s), gear case, power take off, and axles to be supplied will be newly manufactured and purchased directly from the original component manufacturer or their authorized OEM distributor.  
M-B certifies that only unused, newly manufactured components will be used and purchased directly from the original component manufacturer or their authorized OEM distributor.
  - 10.8.4 Upon the request of the purchaser, the contractor shall provide copies of purchase orders and invoices properly dated after bid award to verify the source and newness of these components.

- 10.8.5 Purchase orders and invoices shall reference the component manufacturer, manufacturer's model and/or part number, and the contractor's and/or vehicle manufacturer's name and part number.
- 10.8.6 In the event any of these components are manufactured by either the contractor or vehicle manufacturer, documentation shall be provided indicating manufacture date and chassis installation date by serial number.
- 10.8.7 Failure to provide appropriate documentation of component sourcing shall be considered cause for rejecting the delivered vehicle. The burden of proof shall lay with the contractor.
- 10.9 Manufacturer/supplier stability:
  - 10.9.1 In the interest of continued and reliable service, parts, and technical support, equipment suppliers shall have:
  - 10.9.2 (\*) Documentation provided in the bid package to verify such continuous business activity, such as location and contact lists, financial statements, and annual reports.  
  
M-B has shipped much airport snow removal equipment for more than 50 years. M-B is a privately owned company thus financial statements and annual reports are not available due to confidential reasons. M-B is a sound and reliable firm which celebrated its 100-year anniversary in 2007.
- 10.10 Inspection: For compliance to specifications will be held at the assigned location, even if the unit has had a pilot inspection.

**11.0 PILOT INSPECTION: (Optional Item –Refer to Price Schedule.)**

- 11.1 The contractor will be required to provide an inspection prior to shipment from the manufacturer's facility. The contractor will provide the State with a minimum 30 day notice prior to the pilot inspection.
- 11.2 Prior to shipment from the manufacturer's plant, representatives of the State will inspect a **completed unit**, for conformance to specifications. The completed unit, component equipment, and accessories shall be inspected and/or tested by the contractor for compliance with specifications prior to the arrival of the State inspection team.
  - 11.2.1 The unit will be required for inspection, complete as set forth in the specifications, ready to ship, not as it may come off the assembly line with after-assembly work yet to be completed.
  - 11.2.2 Inspection area will be warm and dry with exception to when running of unit through its paces, which may require the unit to be outside.
- 11.3 The contractor shall provide full access to the State inspection team.
- 11.4 These inspections by the State will be thorough and very critical. It will determine quality of workmanship and encompass a complete review of the specifications. Adequate time and technical personnel shall be made available to assist the State

in these inspections. This must be accomplished prior to work proceeding on the balance of units.

11.5 Inspection Trip Costs:

11.5.1 The contractor will supply round trip coach "Y" full air fare (not supersaver), with open arrival and departure times, for two (2) inspectors to the manufacturing plant. Both inspectors will depart from **ANCHORAGE**.

11.5.2 Per Diem for each inspector shall be at a rate of \$150.00 per day, each. It is expected that there will be three (3) days (travel day, inspection day, and return travel day).

11.5.3 The successful vendor shall assist by booking lodging reservations. Meals and lodging will be paid by the State inspectors.

11.5.4 All ground transportation necessary to conduct the inspection including up to two (2) vehicles, one (1) for the Contracting Authority representative and one (1) for the maintenance personnel, (Chevy Lumina, Ford Taurus, or similar size sedan).

11.6 While the State recognizes contractual responsibility in testing, the State reserves the exclusive right to reduce the number of inspectors when and if that action seems prudent. If the number of inspectors is reduced, the Contractor will return to the State all monies saved by that action within thirty (30) days following the actual inspection.

11.7 It shall be the responsibility of the State inspection team to technically inspect and test the unit for compliance with the specifications.

11.8 It shall be the responsibility of the Contracting Authority Representative to observe the inspection and test to assure compliance with the published terms, conditions, and specifications of the contract, and to mediate any disputes which may arise between the contractor and the Department of Transportation's representatives.

11.9 FINAL ACCEPTANCE REMINDER: Final acceptance is at final destination; however, all major tests will be conducted at the contractor's place of business unless the State has reason to believe alterations or damages have taken place which may have changed the performance or design characteristics of the unit since the time of inspection at the contractor's location.

11.9.1 A final inspection of the unit will be conducted at FOB point to assure that the unit still meets specifications.

**END OF SPECIFICATION #547-AIP**

**END OF CONTRACT**